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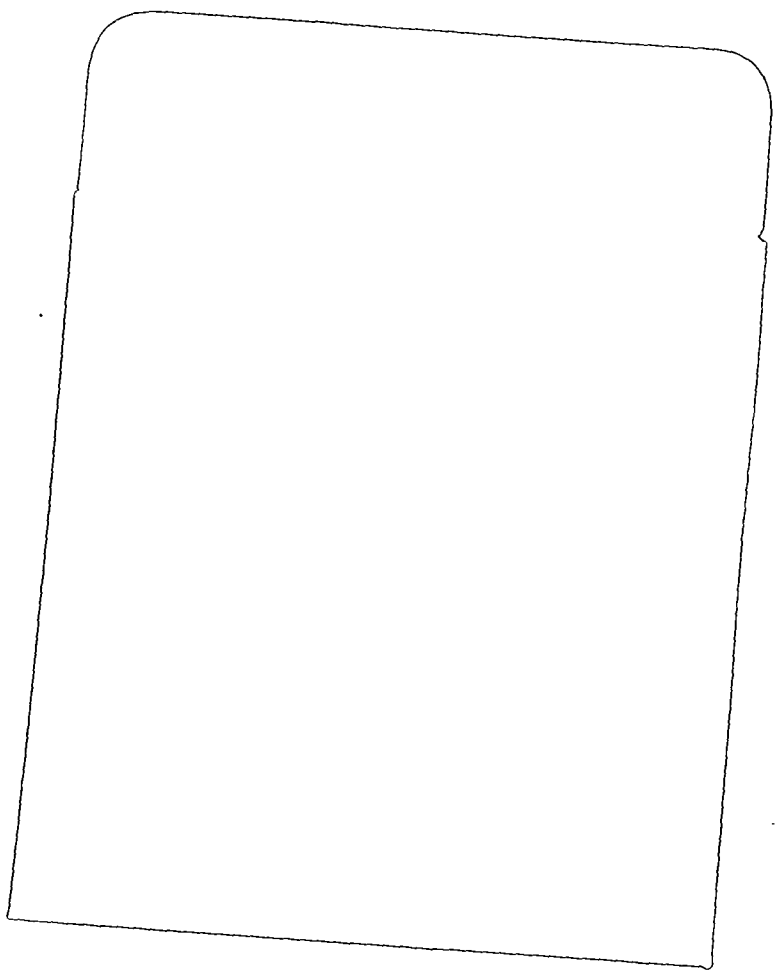
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ORGANIZATION, TECHNICAL AND LOGISTICAL DATA

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WAR DEPARTMENT • 1 AUGUST 1945



WAR DEPARTMENT FIELD MANUAL
FM 101-10

This manual supersedes FM 101-10, 21 December 1944

STAFF OFFICERS' FIELD MANUAL
ORGANIZATION, TECHNICAL
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**WAR DEPARTMENT,
WASHINGTON 25, D. C., 1 Aug 45.**

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[AG 800.7 (1 Aug 45)]

BY ORDER OF THE SECRETARY OF WAR:

OFFICIAL:

EDWARD F. WITSELL

Major General

Acting the Adjutant General

G. C. MARSHALL

Chief of Staff

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REVISION NOTES, FM 101-10

CHAPTER	PAGE	PARAGRAPH	LINE	COLUMN	RECOMMENDED CHANGES, ADDITIONS, CORRECTIONS (with reasons—where applicable)

☐ Material for addition is attached.

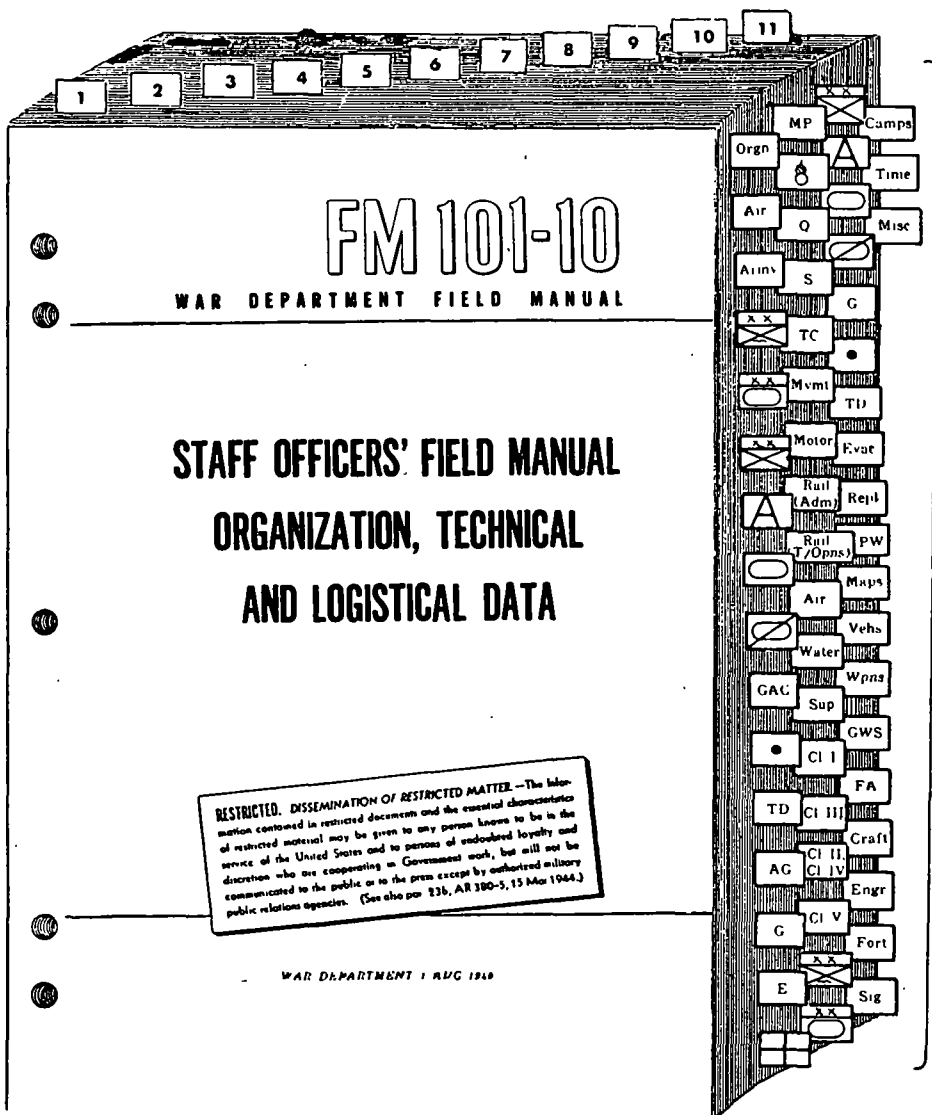
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TABLE OF CONTENTS

	PARAGRAPHS
CHAPTER 1—ORGANIZATION	101-168
SECTION I—GENERAL	101-104
SECTION II—AIR FORCES	105-106
SECTION III—ARMY, TASK FORCE, CORPS	107-109
SECTION IV—AIRBORNE DIVISION	110-113
SECTION V—ARMORED DIVISION	114-117
SECTION VI—INFANTRY DIVISION	118-121
SECTION VII—MISCELLANEOUS UNITS	122-167
SECTION VIII—SERVICE TROOP REQUIREMENTS	168
CHAPTER 2—TROOP MOVEMENTS	201-244
SECTION I—TROOP MOVEMENT—GENERAL	201-205
SECTION II—MOTOR MOVEMENT	206-216
SECTION III—ADMINISTRATIVE RAIL MOVEMENT	217-225
SECTION IV—RAIL MOVEMENT IN THEATER OF OPERATIONS	226-228
SECTION V—MOVEMENT BY AIR TRANSPORT	229-236
SECTION VI—TROOP MOVEMENT—WATER	237-244
CHAPTER 3—SUPPLY	301-347
SECTION I—GENERAL	301-324
SECTION II—AIRBORNE DIVISION	325-328
SECTION III—ARMORED DIVISION	329-331
SECTION IV—INFANTRY DIVISION	332-334
SECTION V—MISCELLANEOUS UNITS	335-347
CHAPTER 4—EVACUATION, REPLACEMENTS AND PRISONERS OF WAR	401-417
SECTION I—EVACUATION	401-408
SECTION II—REPLACEMENTS	409-415
SECTION III—PRISONERS OF WAR	416-417
CHAPTER 5—MILITARY MAPS	501-509
CHAPTER 6—CHARACTERISTICS OF MATERIEL	601-615
CHAPTER 7—FIELD ENGINEERING DATA	701-709
CHAPTER 8—SIGNAL COMMUNICATION DATA	801-845
SECTION I—RESPONSIBILITY	801-802
SECTION II—SIGNAL INTELLIGENCE AND COMMUNICATION SECURITY	803-807
SECTION III—USE OF SIGNAL COMMUNICATION	808-814
SECTION IV—SIGNAL CENTER	815-818
SECTION V—RADIO COMMUNICATION	819-828
SECTION VI—VISUAL COMMUNICATION	829-835
SECTION VII—WIRE COMMUNICATION	836-843
SECTION VIII—TABLES OF SIGNAL EQUIPMENT	844-845
CHAPTER 9—CAMPS AND BIVOUAC AREAS	901-906
CHAPTER 10—TIME, TIDE AND LIGHT	1001-1006
CHAPTER 11—MISCELLANEOUS DATA	1101-1105

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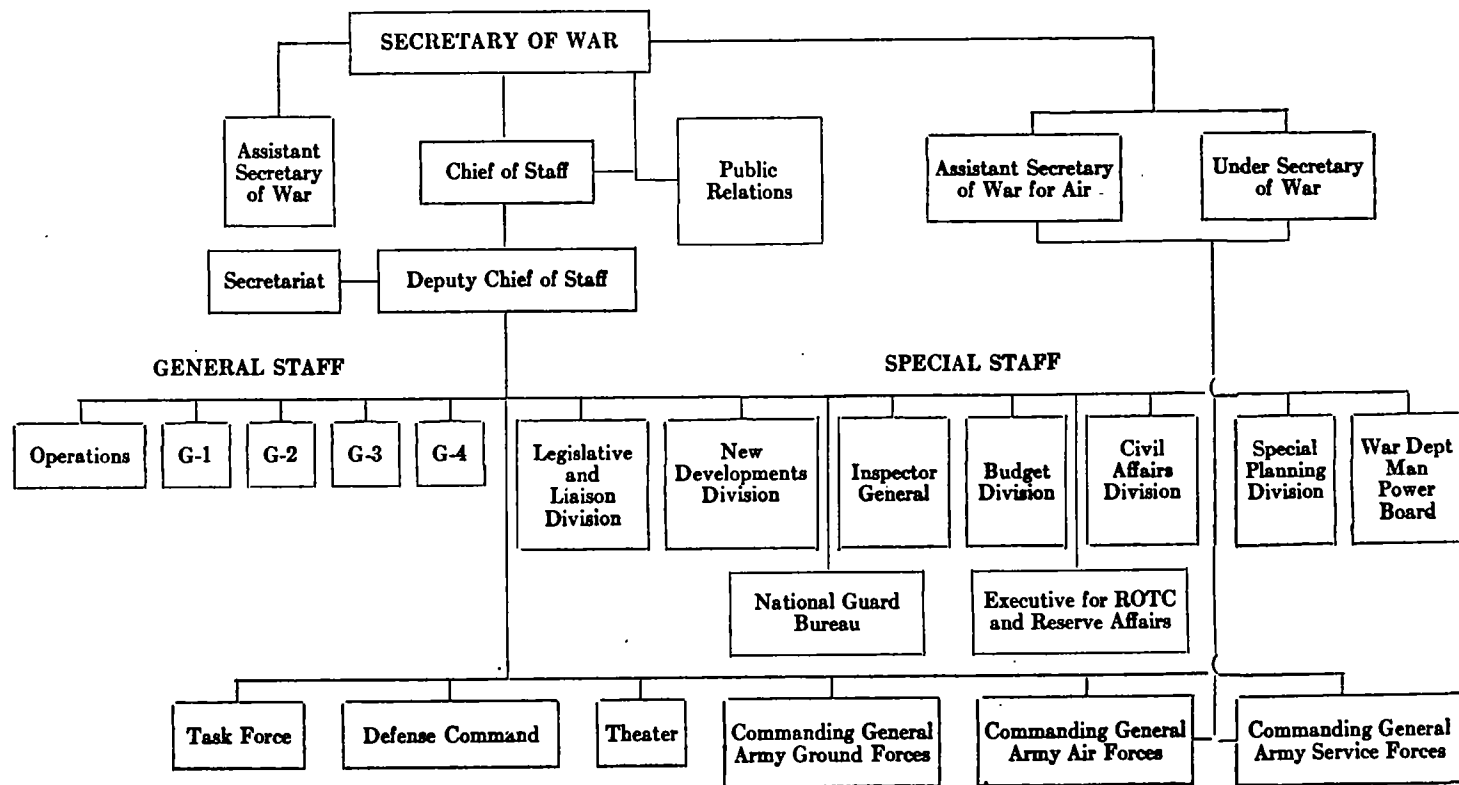
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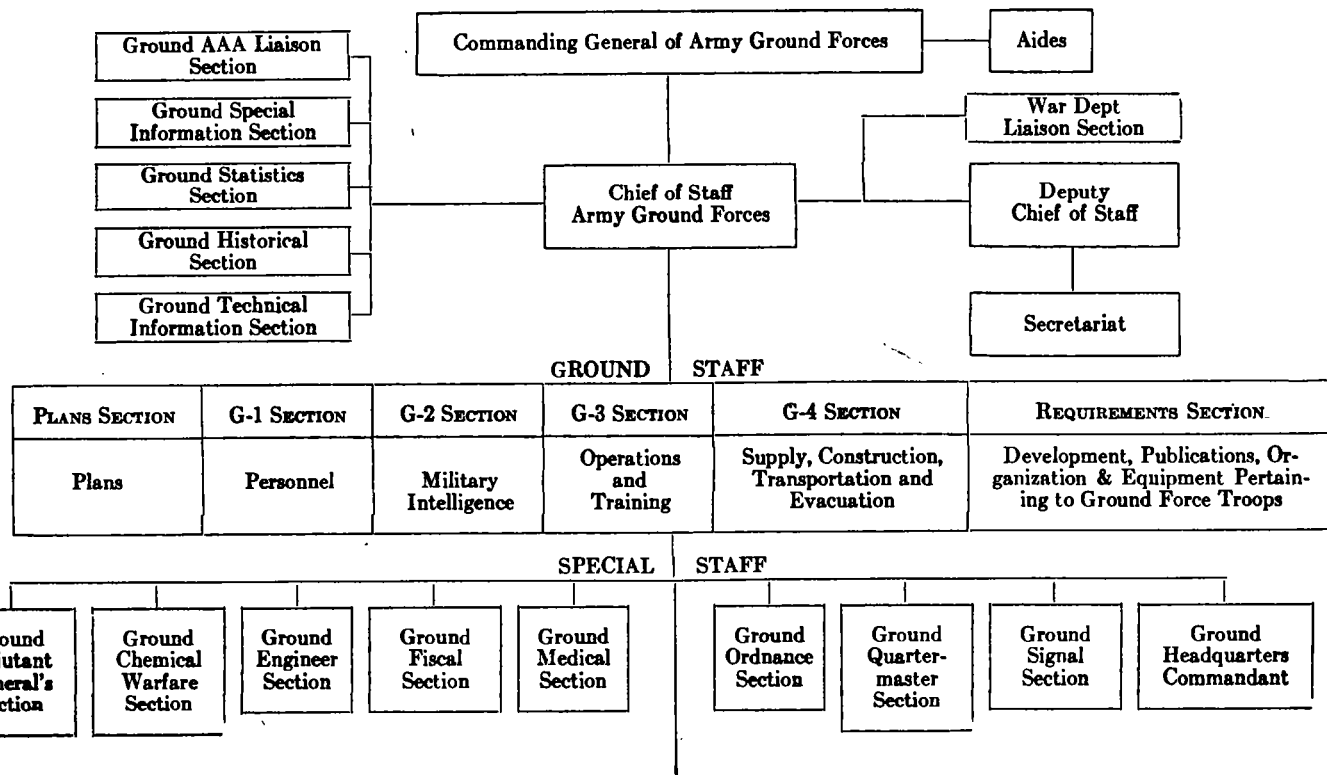
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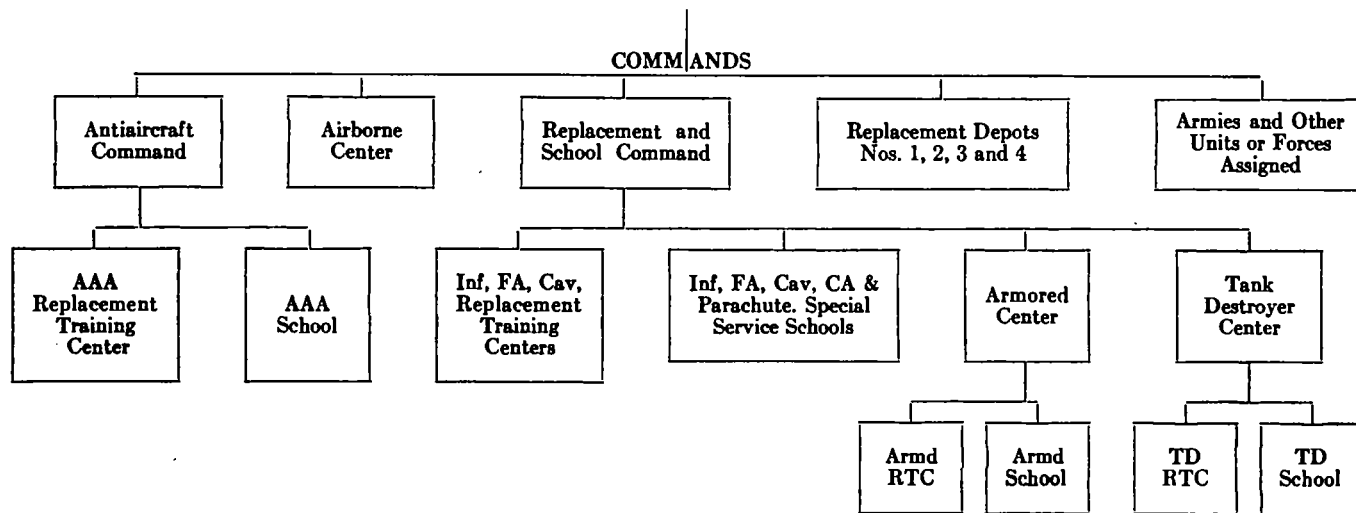
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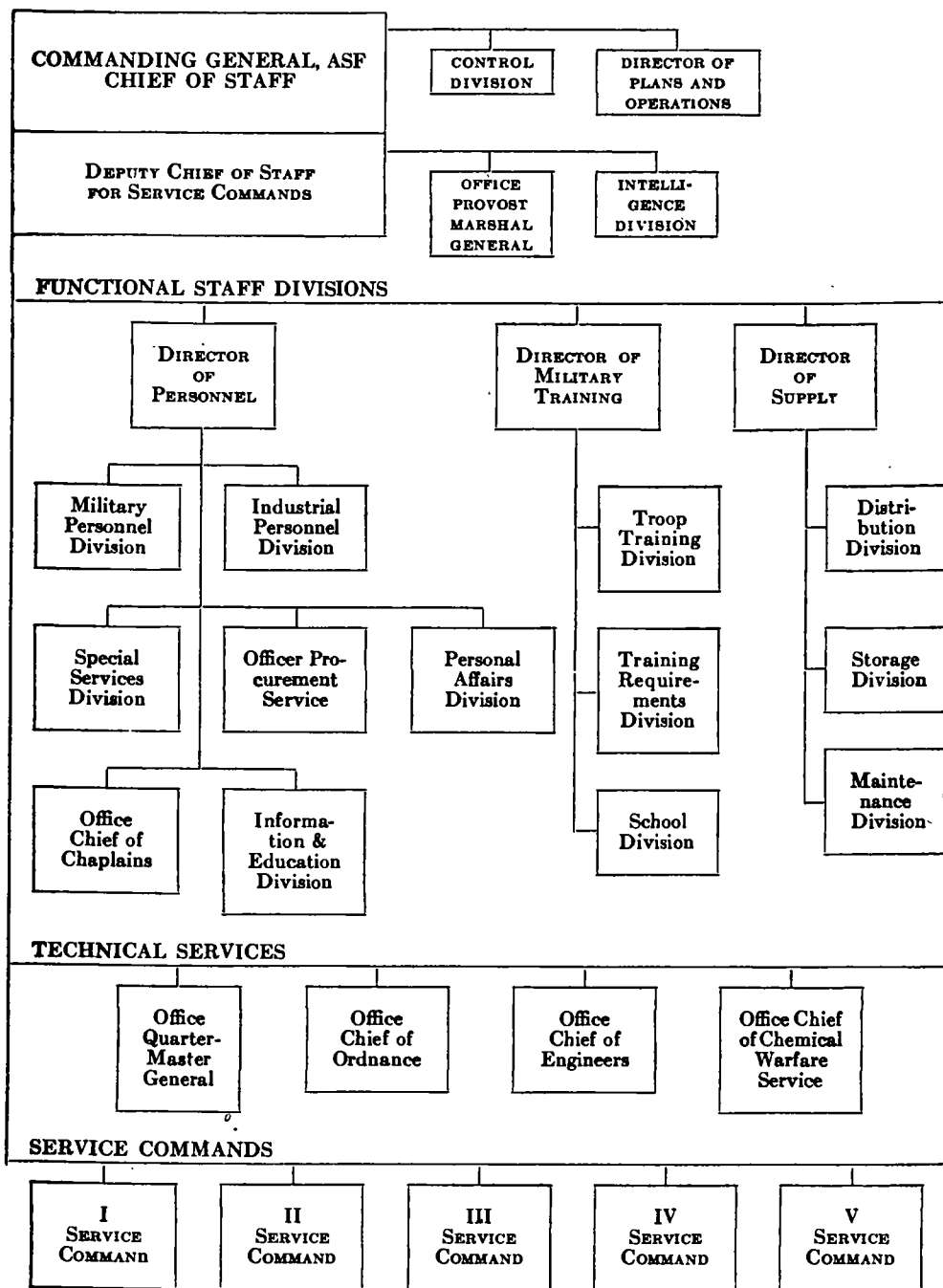
■ 102. ORGANIZATION OF THE ARMY GROUND FORCES:



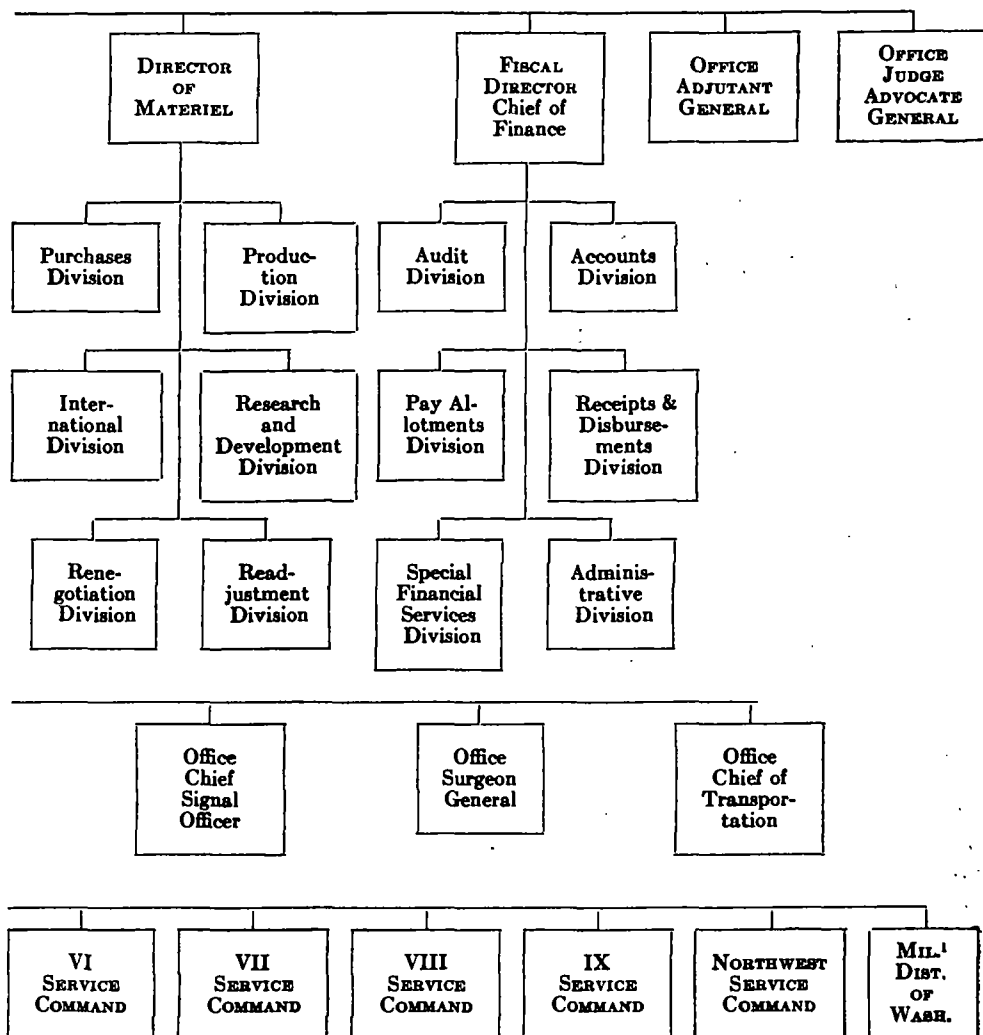
102. ORGANIZATION OF THE ARMY GROUND FORCES (Continued) :



■ 103. ORGANIZATION OF THE ARMY SERVICE FORCES:

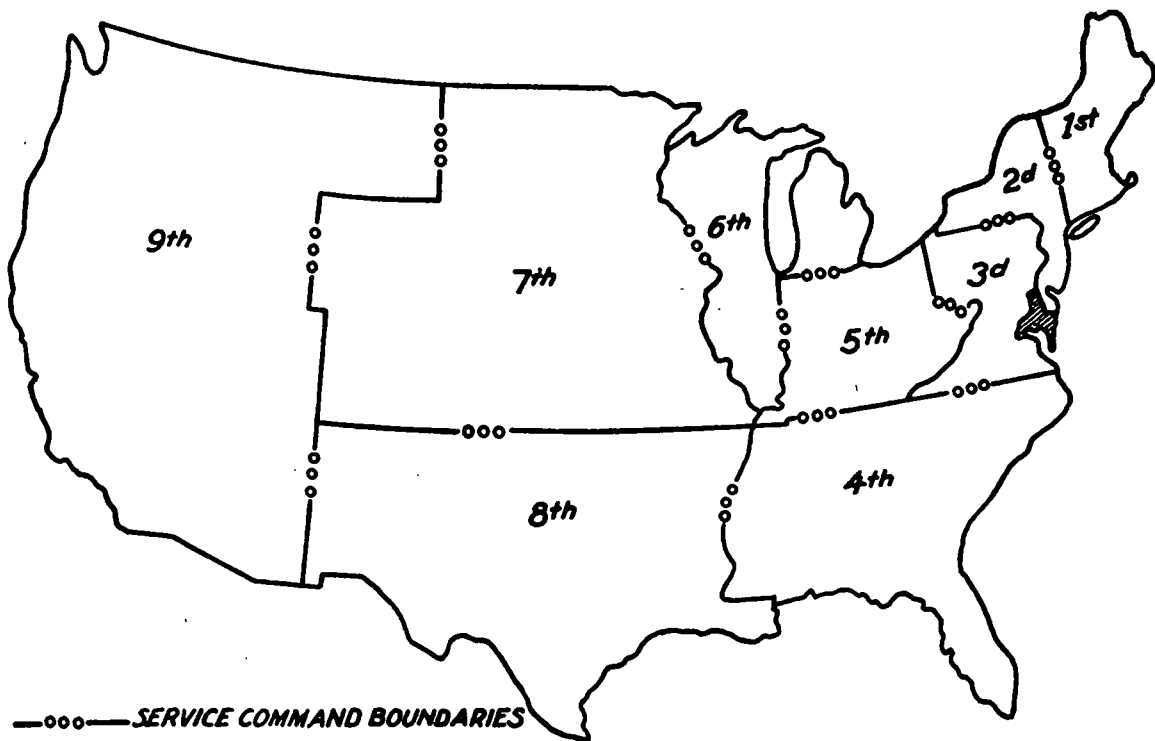


103. ORGANIZATION OF THE ARMY SERVICE FORCES (Continued):



¹ Under Army Service Forces for Administrative and Supply Functions.

■ 104. SERVICE BOUNDARIES:



All activities of the Army of the United States in the Provinces of British Columbia and Alberta, and Territories of Yukon and Mackenzie, Canada together with the operation, supply, and construction activities connected with the White Pass and Yukon Railway, and the highway from Whitehorse to Fairbanks, Alaska, together with such base installations as may be necessary in Skagway and Fairbanks, Alaska, are combined in the Northwest Service Command.

MILITARY DISTRICT OF WASHINGTON

The Military District of Washington includes the Dis-

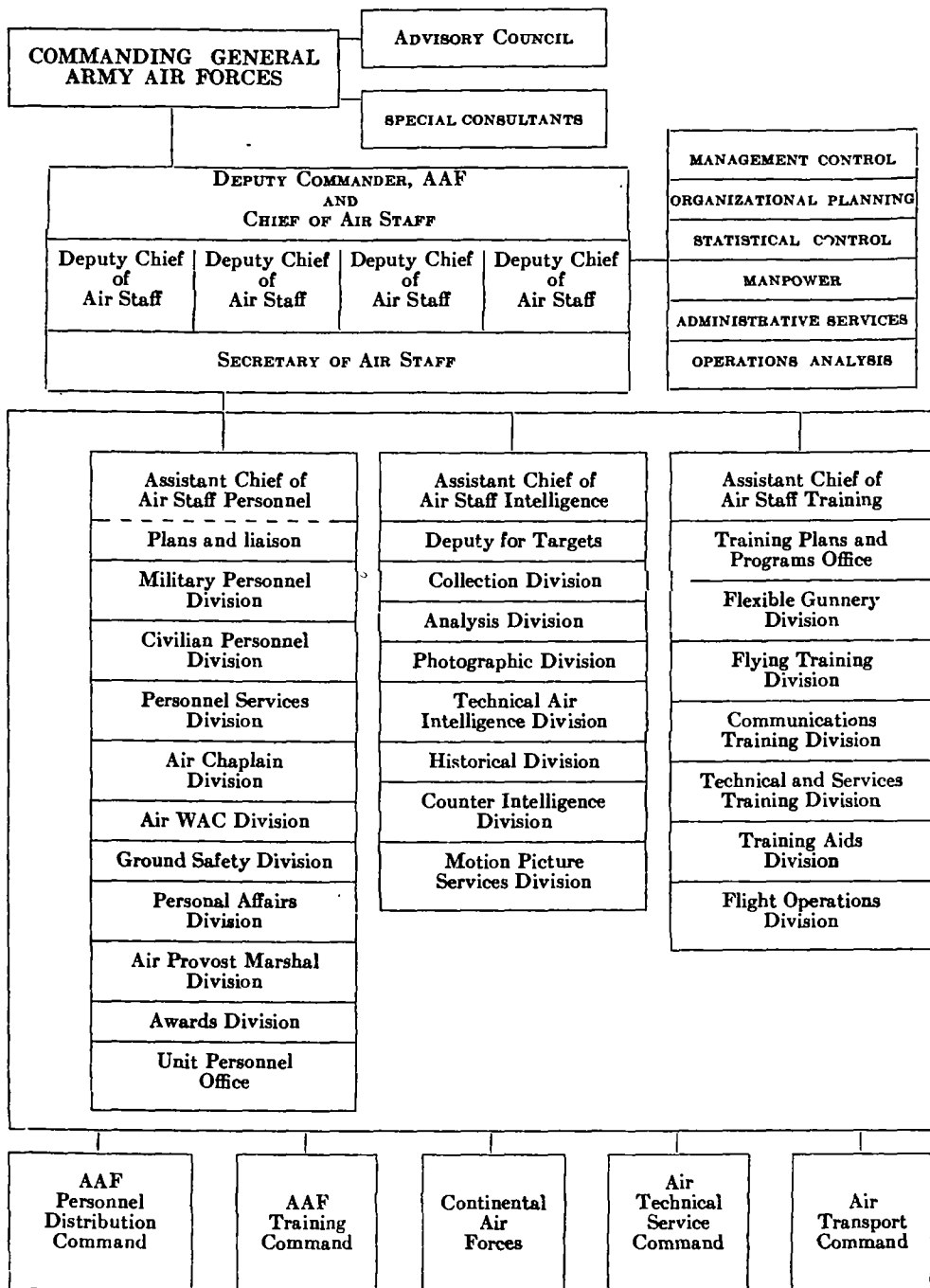
trict of Columbia, the counties of Arlington and Fairfax, and the City of Alexandria in the State of Virginia; and the counties of Montgomery and Prince George, and that part of Charles lying north of Mattawoman Creek in the State of Maryland.

The geographic area of the Military District of Washington is removed entirely from the Third Service Command, except that all schedules and administrative matters pertaining to enlisted procurement, processing, and distribution of recruits procured within the Military District of Washington will be coordinated by the Third Service Command.

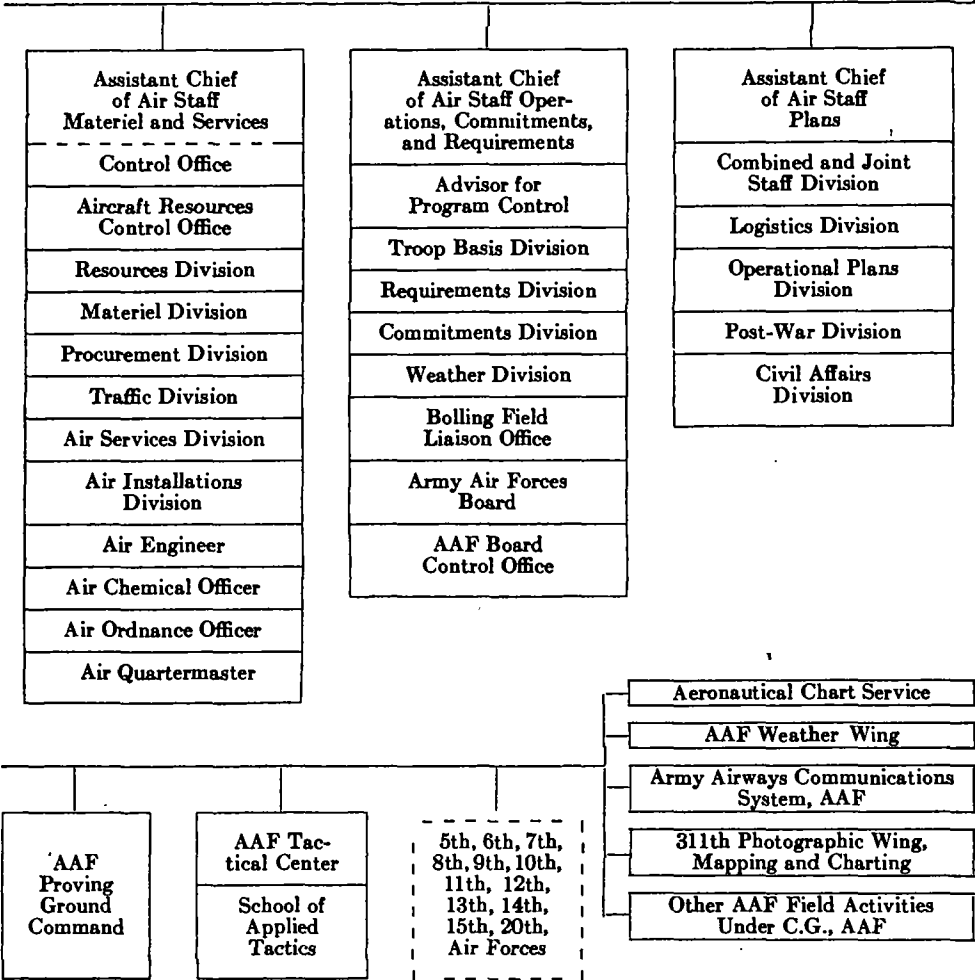
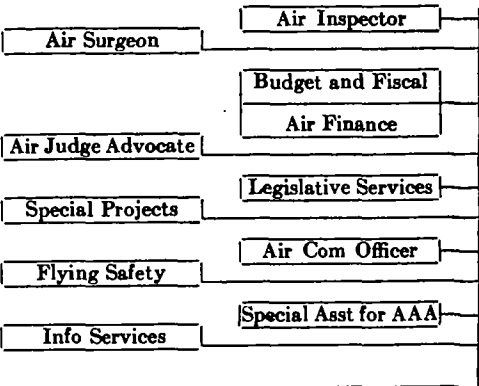
ORGANIZATION

SECTION II **AIR FORCES**

■ 105. a. ORGANIZATION OF THE ARMY AIR FORCES :



105. a. ORGANIZATION OF THE ARMY AIR FORCES (Continued) :



105. ORGANIZATION OF ARMY AIR FORCES:**b. ORGANIZATION OF AN AIR FORCE:**

(1) The entire organization of the Army Air Forces is devoted to the basic function of assuring that the squadrons assigned to it are able successfully to discharge the missions assigned to them by the Commanding General of the Theater. In an Army Air Force are a number of different squadrons. The pilot of a single-place aircraft, and the airplane crew of a multi-place aircraft are the fundamental striking units. The aircraft pilots or crews are grouped into Flights, the basic combat unit, and the Flights in turn are assembled into the basic combat and administrative unit—the Squadron. The number of aircraft which form a Flight varies as does the number of aircraft which form a Squadron.

(2) For Air Force units see AR 95-10.

(3) For Air Force organizations see AAF Manual 65-1.

■ 106. AIR FORCE UNITS:**a. Bombardment Squadrons:**

1	1	2	3	4
	Unit	Personnel	Planes	Remarks
2	Bomb Sq (Very Heavy) T/O & E 1-167 (17 Apr 44, C1, 2)	O.....102 EM.....542 Agg.....644	10 Four-Engine Bombers Flight A—4 Flight B— Flight C—3	Combat crew: 1 Pilot (O) 1 Co-Pilot (O) 2 Navigator-Bombardiers, Radar (O) 1 Flight Engineer (EM) 1 Radio Operator-Mechanic (EMc) 5 Aerial Gunners (EM) (For aircraft without central fire control.) 4 Aerial Gunners (EM) and 1 Central Fire Control Gunner (EM) (For aircraft with central fire control.)
3	Bomb Sq (Heavy) T/O & E 1-117 (21 July 44)	O.....66 EM.....354 Agg.....420	12 Four-Engine Bombers Flight A—4 Flight B—4 Flight C—4	Combat crew: Pilot (O) Co-pilot (O) 2 Bombardier-Navigator (O) 2 Mechanic-gunner 2 Radio operator-gunner (EM) Armorer Gunner (EM)
4	Bomb Sq (Medium) T/O & E 1-127 (18 Aug 44)	O.....66 EM.....299 Agg.....365	16 Two-Engine Bombers Flight A—4 Flight B—4 Flight C—4 Flight D—4	Combat Crew: Pilot (O) Co-pilot (O) Mechanic-Gunner (EM) Bombardier-Navigator (O) Radio Mechanic-gunner (EM) Armorer Gunner (EM)
5	Bomb Sq (Light) T/O & E 1-137 (28 Mar 44, C1,2)	O.....35 EM.....239 Agg.....274	16 Two-Engine Bombers Flight A—4 Flight B—4 Flight C—4 Flight D—4	Combat crew: Pilot (O) 2 Gunners (EM) 1 Bombardier-Navigator (O) (per flight)

106. AIR FORCE UNITS:

b. Fighter Squadrons:

	1	2	3	4
	Unit	Personnel	Planes	Remarks
2	Ftr Sq Single-Engine T/O & E 1-27 (22 Dec 43 C1)	O..... 39 EM..... 245 Agg..... 284	25 Single-Engine Fighters Flight A—9 Flight B—8 Flight C—8	Combat crew: Pilot (O)
3	Ftr Sq Two-Engine T/O & E 1-37 (22 Dec 43 C1, 2)	O..... 39 EM..... 274 Agg..... 313	25 Two-Engine Fighters Flight A—9 Flight B—8 Flight C—8	Combat crew: Pilot (O)
4	Night Ftr Sq T/O & E 1-67 (4 Sep 44)	O..... 42 EM..... 234 Agg..... 276 Agg..... 276	12 Two-Engine Night Fighters Night Fighters Flight A—4 Flight B—4 Flight C—4	Combat crew: Pilot (O) Radar Observer (O) Radar Observer (O) Gunner (EM)

c. Reconnaissance Squadrons:

2	Tac Rcn Sq T/O & E 1-267 (13 Apr 45)	O..... 38 EM..... 239 Agg..... 277	Flights A, B, and C each have 6 single- engine, fighter type and 1 liaison AP	Combat crew: Liaison..... Pilot (EM) Fighter..... Pilot (O) Has photo Lab with limited reproduc- tion capacity.
3	Photo Rcn Sq T/O & E 1-757 (17 Sep 43, C1, 2, 3)	O..... 43 EM..... 290 Agg..... 333	16 Two-Engine Planes Flight A—4 Flight B—4 Flight C—4 Flight D—4	Combat crew: Pilot (O) Has photo Lab with moderate reproduc- tion capacity and limited interpretation facilities:
4	Combat Mapping Sq (4E) T/O & E 1-768 (20 Sep 43, C1, 2)	O..... 64 WO..... 1 EM..... 373 Agg..... 438	12 Four-Engine Bombers Flight A—5 Flight B—4 Flight C—4	Combat crew: Pilot (O), Co-pilot (O) Navigator-Gunner (O) Radio-Mechanic-Gunner (EM) Mechanic-Gunner (EM) Upper Turret Gunner Tail Gunner Photographer-Gunner (EM).... Photographer (EM)

106. AIR FORCE UNITS:

d. Air Service and Air Depot Units:

1	2	3	4
Unit	Personnel	Planes	Remarks
2 Sv Gp Hq and Hq Sq T/O & E 1-142 (16 June 43, C1, 2, 3)	O..... 28 EM.....135 Agg.....163		Furnishes Adm overhead for a Sv Cen.
3 Air Sv Sq T/O & E 1-417 (2 Jan 44, C1, 2)	O..... 7 WO..... 2 EM.....238 Agg.....245	3 Utility	Operates Sv Cen Sup and Engr (3d Ech)
4 Hq & Base Sv Sq, Sv Gp T/O & E 1-452R (5 Mar 45)	O..... 27 WO..... 1 EM.....228 Agg.....256		Hq for the integrated Sv Gp. Performs Adm Sv for itself and 1 C Gp.
5 Engr Sq Sv Gp T/O & E 1-457R (5 Mar 45)	O..... 13 WO..... 1 EM.....262 Agg.....276		The Engr Sq of the integrated Sv Gp. Performs 3d Ech Maint and Rep for 1 C Gp.
6 Materiel Sq Sv Gp T/O & E 1-458R (5 Mar 45)	O..... 7 WO..... 1 EM.....132 Agg.....140		The Mat Sq of the integrated Sv Gp main- tains and stores Sup for 1 C Gp.
7 Air Dep Gp Hq and Hq Sq T/O & E 1-852 (20 Jan 44, C1, 2, 3)	O..... 25 EM.....152 Agg.....177		Furnishes Adm overhead for an Air Dep.
8 Air Dep Rep Sq T/O & E 1-857 (15 Dec 43 ¹ C1, 2, 3)	O..... 12 EM.....328 Agg.....340	3 Two-Engine Med Cargo	Operates Air Dep Engineering (4th Ech).
9 Dep Sup Sq T/O & E 1-858 (8 Jan 45, C1, 2)	O..... 7 WO..... 1 EM.....124 Agg.....132		Operates Air Dep Sup (4th Ech).

e. Troop Carrier Squadron:

2 Tr Car Sq T/O & E 1-317 (12 May 44, C1)	O..... 68 Flt O..... 16 WO..... 1 EM.....275 Agg.....360	16 Two-Engine Transports Flight A-4 Flight B-4 Flight C-4 Flight D-4 2 liaison (SE)	Air crew: Pilot (O) Co-pilot (O) Aerial Engineer (EM) Radio operator (EM) Navigator (1 per Flt) Additional Equip: 32 Gliders, 15-place or 16 Gliders, 40- place.
--	--	--	--

SECTION III
ARMY, TASK FORCE, AND CORPS

■ 107. ARMY.—*a.* The Army is a flexible combat force capable of independent operations, consisting of two or more corps and reinforcing combat and service troops.

The organization of an Army will vary in accordance with the requirements for the particular theater of operations in which it is to be used.

Each Army will be organized with headquarters and headquarters detachments and special troops.

b. Organization, Organic Army Troops:

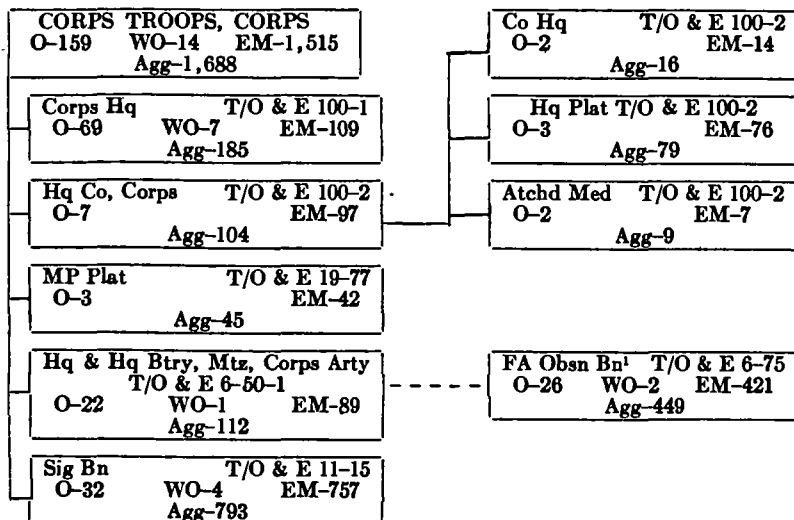
SPECIAL TROOPS, ARMY T/O 200-3 (26 Oct 44, C1, 2)

	1	2	3	4	5	6	7
1	Unit	Hq Sp Trs	Hq Co, Sp Trs T/O 200-2 (26 Oct 44 C1, 2)	Army Hq Det T/O 200-1 (26 Oct 44, C1, 2, 3, 4)	Total	Atchd Med	Aggre- gate
2	Officers.....	3	5	247	255	3	258
3	Warrant Officers.....		26	24	50		50
4	Enlisted men.....	11	754	504	1,269	11	1,280
5	AGGREGATE.....	14	785	775	1,574	14	1,588
6	.30 cal carbine.....	11	675	482	1,168		1,168
7	.30 cal rifle, M1.....	2	151	90	243		243
8	.45 cal pistol.....	1	142	141	284		284
9	Ambulance, ¾-ton.....					1	1
10	Trailer, ¼-ton, cargo.....		6		6	1	7
11	Trailer, 1-ton, cargo.....		9		9		9
12	Truck, ¼-ton.....	3	21		24	1	25
13	Truck, ¾-ton, Wpn Carr.....		3		3	1	4
14	Truck, 2½-ton, cargo.....		9		9		9

■ 108. TASK FORCE.—A task force consists of those units (command, intelligence, combat and service) necessary to carry out certain planned operations (task). It has no fixed organization and may be organized as Army, Navy or Air Force, or it may be a combination of either two or all three. Thus a task force designed for one operation might be especially strong in armored units; while in another, amphibious units might be predominant.

■ 109. CORPS.—*a.* The organic elements of the corps will consist of a headquarters and headquarters company; military police platoon; signal battalion; headquarters and headquarters battery, corps artillery; and a field artillery observation battalion. The functions of the corps in an army will be primarily tactical. The functions of the separate corps will necessarily be both tactical and administrative since under such circumstances the corps is in effect operating as an army. Other units may be assigned to a corps in accordance with its combat mission. These will be divisions, groups, and battalions of field artillery, antiaircraft artillery, tank, tank destroyer, engineer, and cavalry reconnaissance elements.

109. CORPS:

b. Diagram:

¹ Includes attached medical and chaplains.

*c. Organization Organic Corps Troops:*¹

	1	2	3	4
1	Unit	Hq T/O & E 100-1 (19 Jan 45 C1)	Hq Co T/O & E 100-2 (19 Jan 45 C1) (*)	Hq & Hq Btry, Mtz Corps Arty T/O & E 6-50-1 (20 Oct 44 C1)
2	Officers.....	69	10	22
3	Warrant officers.....	7	1	1
4	Enlisted men.....	109	139	89
5	AGGREGATE.....	185	149	112
6	Carbine, cal .30, M-1.....	110	106	75
7	Rifle, cal .30, M-1903.....	18	28	
8	Pistol, automatic, cal .45.....	46	2	37
9	Gun, submachine, cal .45.....		4	
10	Gun, machine, cal .50, HB.....		3	2
11	2.36" Rocket Launcher.....		20	6
12	Airplane, liaison.....			2
13	Car, 5-passenger (M sedan).....		1	
14	Trailer, ¼-ton.....		3	5
15	Trailer, 1-ton.....		4	4
16	Truck, ¼-ton, 4x4.....		36	7
17	Truck, ¾-ton, weapon carrier.....		2	10
18	Truck, 2½-ton, cargo.....		6	2
19	Truck, 2½-ton, cargo, SWB.....			4

¹ For organization FA Obsn Bn (T/O & E 6-75) see Par 143.

For organization Sig Bn, (T/O & E 11-15) see Par 166.

² Includes Atchd Med and MP Plat (T/O & E 19-77).

■ 110. AIRBORNE DIVISION—TABLE OF ORGANIZATION AND EQUIPMENT No. 71-T (16 Dec 1944) (For Reference Only):¹

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Unit	Hq Abn Div (T/O & E 71- 1T)	Hq Sp Trs (T/O & E 71- 3T)	Hq Co, (T/O & E 71- 2T) C1	MP Plat (T/O & E 19- 97T)	Rcn Plat (T/O & E 2- 77T)	Ord Co (T/O & E 9- 87T)	QM Co (T/O & E 10- 327T)	Sig Co (T/O & E 11- 557T)	2 Inf Preht Regts, (ea) (T/O & E 7- 31T)	Inf Gli Regt (T/O & E 51T)	Div Arty (T/O & E 6- 200T)	Abn AA Bn (T/O & E 44- 257T)	Engr Bn (T/O & E 5- 225T)	Med Co (T/O & E 8- 37T)	Preht Main Co (T/O & E 71- 27T)	Atchd Med, Chap & Band	Total
2 Major general	1																1
3 Brigadier general	1																2
4 Colone	2								1	1	1						6
5 Lieutenant colone	13	1				1	1	1	4	4	5	1	1				36
6 Major	13	1	1	1		1	1	1	6	6	11	2	2	1	1	4	58
7 Major or captain	1																1
8 Captain	12	2	1			2	3	1	22	27	44	8	7		1		152
9 Captain or First lieutenant												1	1	16		41	57
10 First lieutenant	12		3	1	1	3	1	6	61	57	60	16	11	10	3	5	311
11 Second lieutenant	1		1	1	2	2	3	1	35	40	11	9	3				144
12 TOTAL COMMISSIONED	56	4	6	3	3	9	11	10	129	135	133	37	25	27	5	50	768
13 Warrant officer	7					1		4	7	5	13	2	2		1	2	51
14 Master sergeant	10					2	1	3	4	5	6	1	1		1		38
15 First sergeant			1			1	1	1	14	18	17	7	4	1	1		80
16 Technical sergeant	4	1	2			4	2	8	39	61	20	5	4		8	4	204
17 Staff sergeant	9	1	4	1	1	8	7	17	183	240	92	31	20	10	8	15	830
18 Sergeant	11	1	6	9	4		13	15	151	196	100	28	27	10	7	4	733
19 Corporal	1		4	7	4	1	22	2	49	80	214	78	31	10	1	14	566
20 Technician, grade 3	8					12		11			5	3	1	9		33	78
21 Technician, grade 4	39		11	1	2	21	7	47	57	80	148	22	25	19	50	45	640

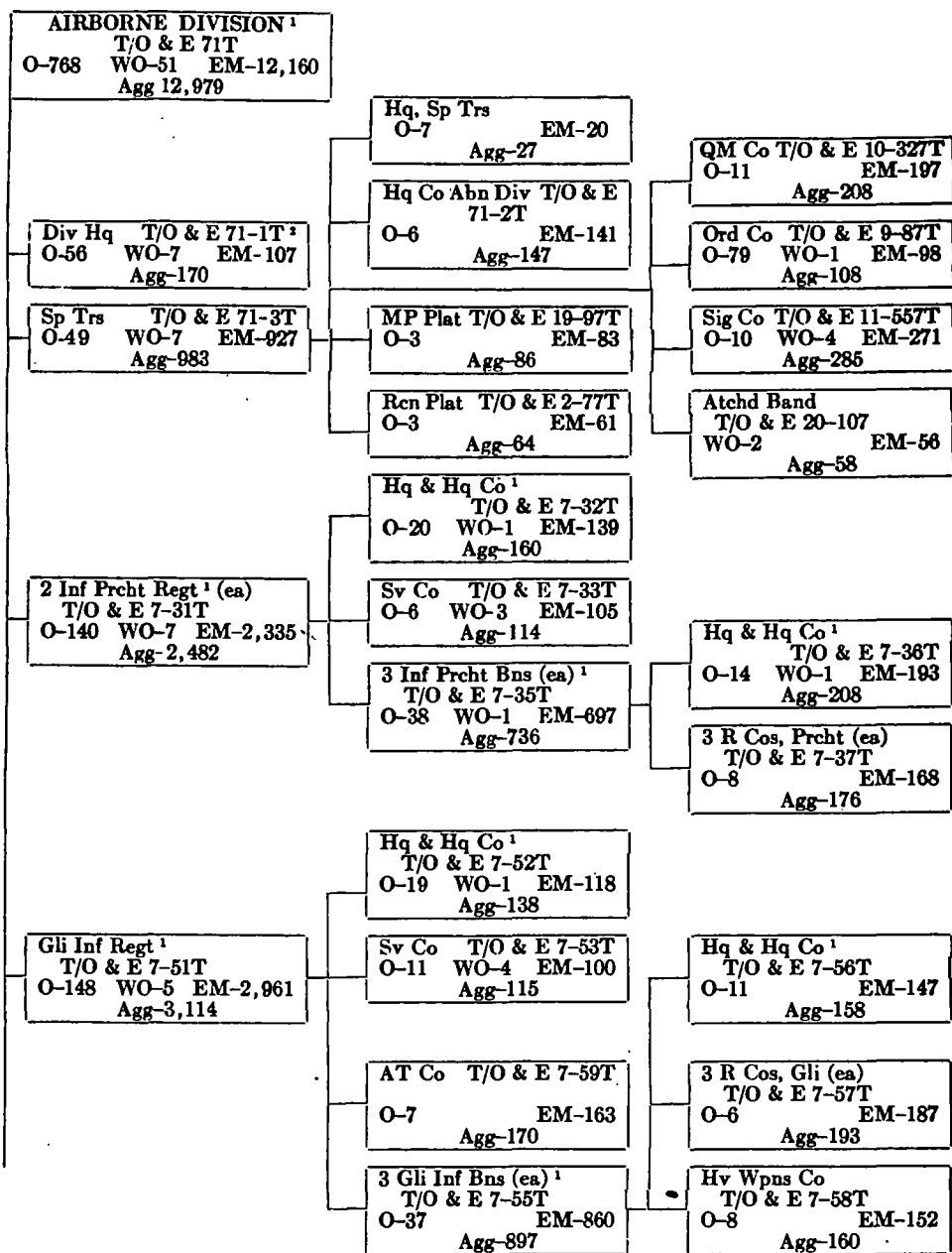
ORGANIZATION
SECTION IV
AIRBORNE DIVISION

¹ All T/O & Es dated 16 Dec 44 except where noted.

110. AIRBORNE DIVISION—*T/O & E 71-T (16 Dec 1944) (Continued)* :

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	Unit	Hq Abn Div (T/O & E 71- 1T)	Hq Sp Trs (T/O & E 71- 3T)	Hq Co, (T/O & E 71- 2T) C1	MP Plat (T/O & E 19- 97T)	Rcn Plat (T/O & E 2- 77T)	Ord Co (T/O & E 9- 87T)	QM Co (T/O & E 10- 327T)	Sig Co (T/O & E 11- 557T)	2 Inf Pcht Regts, (ea) (T/O & E 7- 51T) 7- 31T)	Inf Gli Regt (T/O & E 7- 51T)	Div Arty (T/O & E 6- 200T)	Abn AA Bn (T/O & E 44- 275T)	Engr Bn (T/O & E 5- 225T)	Med Co (T/O & E 8- 37T)	Pcht Maint Co (T/O & E 71- 27T)	Atchd Med, Chap & Band	Total
22	Technician, grade 5.....	23	2	24	1	12	34	45	78	86	140	246	39	60	40	52	94	1,072
23	Private, first class.....	2	1	41	30	18	5	44	38	1,168	1,445	451	190	142	80	47	97	4,983
24	Private.....		1	48	34	20	10	54	51	477	573	532	220	162	94	58	131	2,936
25	Basic.....			(7)	(4)	(3)	(5)	(10)	(13)	(143)	(213)	(85)	(33)	(25)	(14)	(12)	(38)	(746)
26	TOTAL ENLISTED.....	107	7	141	83	61	98	197	271	2,228	2,838	1,831	624	481	273	233	437	12,160
27	AGGREGATE.....	170	11	147	86	64	108	208	285	2,364	2,978	1,977	663	508	300	239	489	12,979

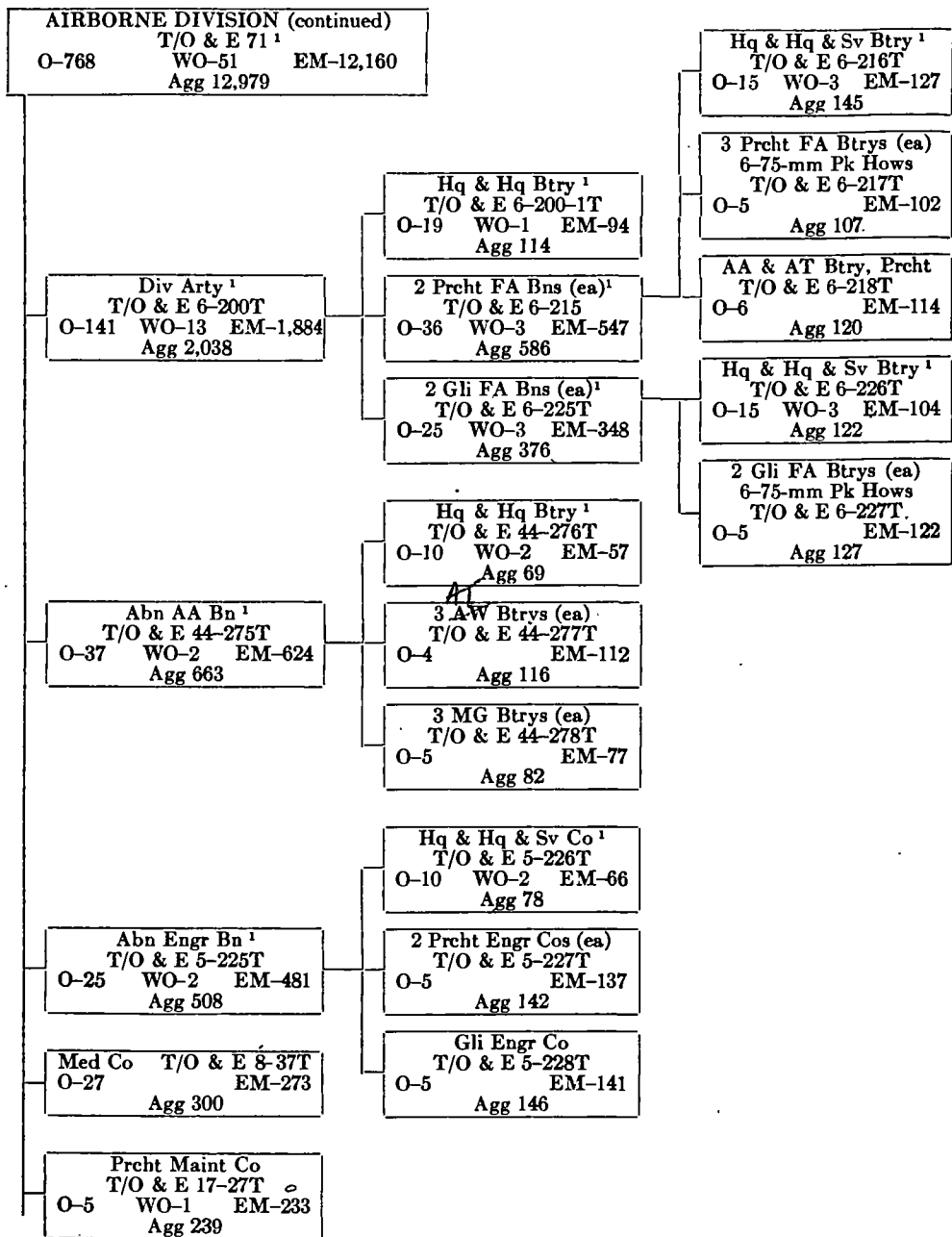
■ 111. AIRBORNE DIVISION—DIAGRAM (For computations involving Personnel) :



¹ Includes attached medical and chaplains.

² Normally administered by Sp Trs.

111. AIRBORNE DIVISION—DIAGRAM (Continued) :

¹ Includes attached medical and chaplain.

■ 112. SUMMARY OF ARMAMENT—AIRBORNE DIVISION (For computations involving Armament)

1	Unit	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
		.30 cal carbine	.30 cal MG, H	.30 cal MG, L	.30 cal Rifle, Auto.	.30 cal Rifle, M1	.30 cal Rifle, M1C	.45 cal Pistol	.45 cal SMG	.30 cal MG, HB, Flex	57-mm gun, AT, Towed	2.75" Launcher Rockets	60-mm Mortar	75-mm How. high speed	81-mm Mortar	
2	Total Abn Div, T/O & E 71T	4,961	24	260	300	6,169	81	763	383	165	50	567	81	60	42	2
3	Div Hq, T/O & E, 71-1T	134						26								3
4	Sp Trs, T/O & E 71-3T	601		2	3	247		10	110	38		37				4
5	Hq Co, T/O & E 71-2T	(115)			(3)	(37)		(3)	(3)	(3)		(13)				5
6	MP Plat, T/O & E 19-9T	(23)		(2)		(21)		(1)	(41)			(4)				6
7	Ren Plat, T/O & E 2-7T					(64)			(4)	(9)		(5)				7
8	Ord Co, T/O & E 9-8T	(67)				(21)		(2)	(18)	(3)		(5)				8
9	QM Co, T/O & E 10-32T	(160)				(46)		(2)	(17)	(17)		(5)				9
10	Sig Co, T/O & E 11-55T	(178)				(58)		(2)	(47)	(4)		(5)				10
11	Atchd Band, T/O & E 20-107 (8 Mar 44)	(58)														11
12	2 Inf Regts, Preht (ea), T/O & E 7-31T	484		105	81	1,869	27	11	54	8		73	27		12	12
13	Hq & Hq Co, T/O & E 7-32T	(31)				(96)		(5)				(5)				13
14	Sv Co, T/O & E 7-33T	(9)				(105)			(8)			(5)				14
15	3 Inf Bns, Preht (ea), T/O & E 7-35T	(148)		(35)	(27)	(556)	(9)	(2)	(18)			(21)	(9)		(4)	15
16	Hq & Hq Co, T/O & E 7-36T	(52)		(8)		(124)		(2)				(9)			(4)	16
17	3 R Cos, T/O & E 7-37T	(32)		(9)	(9)	(144)	(3)		(6)			(4)	(3)			17
18	Inf Regt, Gli, T/O & E 7-51T	761	24	36	135	1,816	27	293	63	23	18	108	27		18	18
19	Hq & Hq Co, T/O & E 7-52T	(24)				(76)		(4)	(3)	(2)		(4)				19
20	Sv Co, T/O & E 7-53T	(32)				(82)		(1)		(8)		(8)				20
21	AT Co, T/O & E 7-59T	(48)				(77)		(45)		(1)	(9)	(9)				21
22	3 Inf Bns, Gli (ea), T/O & E 7-55T	(219)	(8)	(12)	(45)	(527)	(9)	(81)	(20)	(4)	(3)	(29)	(9)		(6)	22
23	Hq & Hq Co, T/O & E 7-56T	(53)		(6)		(54)		(17)	(2)	(3)		(8)				23
24	3 R Cos (ea), T/O & E 7-57T	(28)		(2)	(15)	(143)	(3)	(10)	(6)	(1)		(5)	(3)			24
25	Hv Wpns Co, T/O & E 7-58T	(82)	(8)			(44)		(34)		(1)		(6)			(6)	25
26	Div Arty, T/O & E 6-200T	1,572						405	12	54	(8)	240		60		26
27	Hq & Hq Btry, T/O & E 6-200-1T	(94)						(11)		(2)		(6)				27
28	2 FA Bns, Preht (ea), T/O & E 6-215T	(433)						(139)	(4)	(17)	(4)	(67)		(18)		28
29	Hq & Hq & Sv Btry, T/O & E 6-216T	(93)						(38)	(3)	(3)		(11)				29
30	3 Preht Btrys (ea), T/O & E 6-217T	(91)						(16)	(1)	(2)		(14)		(6)		30
31	AA & AT Btry, T/O & E 6-218T	(67)						(53)	(1)	(8)	(4)	(14)				31
32	2 FA Bns, Gli (ea), T/O & E 6-225T	(306)						(58)	(2)	(9)		(50)		(12)		32
33	Hq & Hq & Sv Btry, T/O & E 6-226T	(72)						(38)	(3)	(3)		(14)				33
34	2 Cli Btrys (ea), T/O & E 6-227T	(117)						(10)	(1)	(3)		(18)		(6)		34
35	Abn AA Bn, T/O & E 44-275T	566						3	72	36	24					35
36	Hq & Hq Btry, T/O & E 44-276T	(38)						(3)	(6)							36
37	3 AA Btrys (ea), T/O & E 44-277T	(100)							(18)		(8)					37
38	3 MG Btrys (ea), T/O & E 44-278T	(76)							(6)	(12)						38
39	Abn Engr Bn, T/O & E 5-225T	138		12		351		3	18			31				39
40	Hq & Hq & Sv Co, T/O & E 5-226T	(53)				(6)		(3)				(4)				40
41	2 Preht Cos (ea), T/O & E 5-227T	(24)		(3)		(118)			(6)			(9)				41
42	Gli Co, T/O & E 5-228T	(37)		(6)		(109)			(6)			(9)				42
43	Abn Med Co, T/O & E 8-37T															43
44	Preht Maint Co, T/O & E 71-27T	221				17		1				5				45

• All T/O & E dated 16 Dec 44.

57 AT IN PARA?
HOW ABOUT
57mm RR?

113. SUMMARY OF TRANSPORTATION—AIRBORNE DIVISION:

a. Organic Transportation (for use in computations involving vehicles):

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Vehicles	Aggregate Division	Sp Trs T/O & E 71-5T														
		Hq. Sp Trs	Hq & Hq Co T/O & E 71-1 & 2T	M/P Plad T/O & E 19-37T	Rm Plad T/O & E 4-77T	Ord Co T/O & E 9-37T	QM CO T/O & E 10-38T	Sig Co T/O & E 11-38T	1st Regt. Pchd (ea) T/O & E 7-31T	Hq & Hq Co T/O & E 7-31T	Ss Co T/O & E 7-31T	3 Inf Bn. Pchd (ea) T/O & E 7-31T	1st Regt. Glt T/O & E 7-31T	Hq & Hq Co T/O & E 7-31T	Ss Co T/O & E 7-31T	AT Co T/O & E 7-31T	
2	TRUCKS, ¼-TON																
3	Combat and Command	594	2	41	17	17	9	10	30	18		(18)		182	(14)	(6)	(30)
4	Cargo and Maintenance	80					9	25	2	2		(2)					
5	Attached Medical	25	1	1						2	(2)			7	(1)		
6	Attached Chaplain	5												3	(3)		
6	Wire	46							13	4		(4)		5	(5)		
7	SUB-TOTAL	750	3	42	17	17	18	35	45	26	(2)	(24)		197	(23)	(6)	(30)
8	MISCELLANEOUS																
9	Tractor, crawler type, 20DBHP	3															
10	Car, Light, 5-passenger Sedan	1		1													
11	Motorcycle, solo	236		4	4	12	2	2	9	52		(52)					
11	Scooter, Motor	24															
12	SUB-TOTAL	264		5	4	12	2	2	9	52		(52)					
13	TRUCKS, ¾-TON																
14	Weapon Carrier, Maintenance	15							1	1				4	(1)		
14	Weapon Carrier, Cargo	14		5										7		(2)	(2)
15	Weapon Carrier, wire laying	2							2								
16	Ambulance, Cross Country	16								2		(2)					
17	SUB-TOTAL	47		5				1	3	2		(2)		11	(1)	(2)	(2)
18	TRUCKS, 1½-TON																
19	Cargo	6					1		4					1			(1)
19	SUB-TOTAL	6					1		4					1			(1)
20	TRUCKS, 2½-TON																
21	Ammunition and Cargo	50		2			5	6	3					3		(3)	
22	Kitchen	73		2			1	1	1	14		(14)		18	(1)	(17)	
23	Command and Operations	43		4				36	1			(1)					
23	Motor Maintenance	11		1			3	2	1					2		(2)	
24	Communications	10							10								
25	Personnel and Baggage	46		1			1	5		15		(15)		6		(6)	
26	Attached Medical	3								1	(1)			1	(1)		
27	SUB-TOTAL	236		10			10	50	15	31	(1)	(30)		30	(2)	(28)	
28	TRUCK, 4-TON																
29	Wrecker	1					1										
29	SUB-TOTAL	1					1										
30	Total Self-propelled Vehicles	1304	3	62	21	29	32	88	76	111	(3)	(108)		239	(26)	(36)	(33)
31	TRAILERS																
32	Cargo, ¼-ton	503		34	4	3	18	30	28	24		(24)		107	(4)		(16)
33	Cargo, 1-ton	224		10			11	49	18	30		(30)		19	(1)	(18)	
34	Dump, ¼-ton	12															
35	Attached Medical, ¼-ton	23		1						2	(2)			7	(1)		
36	Attached Chaplain, ¼-ton	6		1										3	(3)		
36	Attached Medical, 1-ton	2								1	(1)						
37	SUB-TOTAL	772	2	47	4	3	29	79	46	57	(3)	(54)		136	(9)	(18)	(16)
38	Planes, Liaison	10															
39	TOTAL VEHICLES	2084	5	109	25	32	61	167	122	168	(6)	(162)		375	(35)	(54)	(49)

113. SUMMARY OF TRANSPORTATION—AIRBORNE DIVISION:

a. Organic Transportation (for use in computations involving vehicles) (Continued):

	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
	\$ Inf Bns, Glt (ca) T/O & E 7-58T	Hq & Hq Co T/O & E 7-58T	\$ Rifle Co (ca) T/O & E 7-57T	Hq Wpns Co T/O & E 7-58T	Div Arty T/O & E 6-500T	Hq & Hq Btry T/O & E 6-500-1T	\$ PA Bns, Pchd (ca) T/O & E 6-516T	Hq & Hq & Ss Btry T/O & E 6-516T	\$ Pchd Btry (ca) T/O & E 6-517T	AA & AT Btry T/O & E 6-516T	\$ PA Bns, Glt (ca) T/O & E 6-525T	Hq & Hq & Ss Btry T/O & E 6-525T	\$ Glt Btry (ca) T/O & E 6-527T	Abn AA Bn T/O & E 4-576T	Hq & Hq Btry T/O & E 4-576T	\$ AW Btry (ca) T/O & E 4-577T	\$ MG Btry (ca) T/O & E 4-578T	Abn Engr Bn T/O & E 5-525T	Hq & Hq & Ss Co T/O & E 5-526T	\$ Pchd & Engr Co (ca) T/O & E 5-527T	\$ Glt Engr Co T/O & E 5-528T	Abn Med Co T/O & E 5-37T	Pchd Maint Co T/O & E 7-47T
2	(44)	(19)	(2)	(19)	134	(8)	(32)	(5)	(7)	(6)	(31)	(5)	(13)	88	(2)	(16)	(16)	20	(3)	(4)	(4)	23	5
3					40		(13)	(1)	(3)	(3)	(7)	(1)	(3)										
4	(2)	(2)			9		(2)	(2)			(2)	(2)		2	(2)			1	(1)				
5					2								(1)										
6					20		(6)	(2)	(1)	(1)	(4)	(2)											
7	(46)	(21)	(2)	(19)	205	(11)	(53)	(10)	(11)	(10)	(44)	(10)	(17)	70	(4)	(16)	(6)	21	(9)	(4)	(4)	23	5
8																		3		(3)			
9																							
10					38	(4)					(17)	(9)	(4)	18	(3)	(2)	(2)	25	(5)	(4)	(12)	5	16
11					24		(12)	(4)	(2)	(2)													
12					62	(4)	(12)	(4)	(2)	(2)	(17)	(9)	(4)	15	(3)	(2)	(2)	28	(5)	(4)	(15)	5	16
13	(1)			(1)			(1)	(1)				(3)	(1)	(1)	2	(2)							
14	(1)	(1)																					
15																							
16																						12	
17	(2)	(1)		(1)	9	(1)	(1)	(1)			(3)	(1)	(1)	2	(2)							12	
18																							
19																							
20					21	(1)	(9)	(9)			(1)	(1)		1	(1)			4	(1)	(1)	(1)		5
21					17	(1)	(8)	(5)			(3)	(3)						4	(1)	(1)	(1)	1	
22					1	(1)																	
23					2		(1)	(1)															
24																							
25					1	(1)								1	(1)							1	
26																							
27					42	(4)	(15)	(15)			(4)	(4)		2	(2)			8	(2)	(2)	(2)	2	5
28																							
29																							
30	(48)	(22)	(2)	(20)	318	(20)	(81)	(30)	(13)	(12)	(68)	(24)	(22)	89	(11)	(18)	(8)	57	(16)	(10)	(21)	42	26
31	(29)	(9)	(2)	(14)	147	(9)	(36)	(9)	(7)	(6)	(33)	(9)	(12)	44	(2)	(8)	(6)	10	(8)		(2)	23	5
32					42	(4)	(15)	(15)			(4)	(4)		2	(2)			8	(2)	(2)	(4)		5
33											(2)	(2)		2	(2)			12					
34	(2)	(2)			9	(1)	(2)	(2)										1	(1)				
35					2	(2)																	
36																							
37	(31)	(11)	(2)	(14)	200	(16)	(53)	(26)	(7)	(6)	(39)	(15)	(12)	48	(6)	(8)	(6)	31	(11)	(6)	(8)	23	10
38					10	(2)	(2)	(2)			(2)	(2)											
39	(79)	(33)	(4)	(34)	526	(36)	(136)	(58)	(20)	(18)	(109)	(41)	(34)	137	(17)	(26)	(14)	88	(27)	(16)	(29)	65	36

113. SUMMARY OF TRANSPORTATION—AIRBORNE DIVISION:

*b. Airplanes and Gliders Supplied by the Troop Carrier Command:*¹

1	Unit	2	3	4	5
		A ²		B ²	
		Acft C47	Gli CG4A	Acft C46	Gli CG10A
2	Total Abn Div.....	445	997	213	354
3	Sp Trs.....	27	216	13	73
4	Hq Sp Trs.....		(2)		(1)
5	Hq Co.....	(15)	(30)	(7)	(10)
6	MP Plat.....		(17)		(6)
7	Rcn Plat.....		(17)		(6)
8	Ord Co.....		(30)		(10)
9	QM Co.....		(75)		(25)
10	Sig Co.....	(12)	(45)	(6)	(15)
11	Atchd Band.....				
12	2 Inf Regt, Prcht (ea).....	144		68	
13	Hq & Hq Co.....	(9)		(4)	
14	Sv Co.....				
15	3 Inf Bns, Prcht (ea).....	(45)		(22)	
16	Hq & Hq Co.....	(9)		(4)	
17	3 R Cos (ea).....	(12)		(6)	
18	Inf Regt, Gli.....		389		150
19	Hq & Hq Co.....		(13)		(4)
20	Sv Co.....				
21	AT Co.....		(52)		(17)
22	3 Inf Bns, Gli (ea).....		(108)		(43)
23	Hq & Hq Co.....		(31)		(11)
24	3 R Cos (ea).....		(16)		(9)
25	Hv Wpns Co.....		(28)		(5)
26	Div Arty.....	110	148	54	51
27	Hq & Hq Btry.....		(16)		(5)
28	2 FA Bns, Prcht (ea).....	(55)		(27)	
29	Hq & Hq Sv Btry.....	(3)		(2)	
30	3 Prcht Btrys (ea).....	(13)		(6)	
31	AA & AT Btry.....	(13)		(7)	
32	2 FA Bns, Gli (ea).....		(66)		(23)
33	Hq & Hq & Sv Btry.....		(14)		(5)
34	2 Gli Btrys (ea).....		(26)		(9)
35	Abn AA Bn.....		146		47
36	Hq & Hq Btry.....		(5)		(2)
37	3 AW Btrys (ea).....		(28)		(9)
38	3 MG Btrys (ea).....		(19)		(6)
39	Abr Engr Bn.....	20	44	10	15
40	Hq & Hq & Sv Co.....		(30)		(10)
41	2 Prcht Cos (ea).....	(10)	(5)		
42	Gli Co.....		(14)		(5)
43	Abn Med Co.....		54		18
44	Co Hq.....		(9)		(3)
45	Med Plat (ea).....		(15)		(5)

¹ Data in this table represents a typical situation and will vary with the type of Acft available and the tactical mission involved.² Either data appearing in columns 2 & 3 of A or 4 & 5 of B, should be used depending on types of Acft available.

■ 114. TABLE OF ORGANIZATION, No. 17, ARMORED DIVISION (For Reference only):

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
	Unit	Dis Hq, T/O 17-1 (13 Jan 45, CI)	Hq Co, T/O 17-8 (13 Jan 45)	Hq CCR, T/O 17-80-1 (13 Jan 45, CI)	Hq CCR, T/O 17-80-1 (15 Sept 45)	Arm'd Sig Co, T/O 11-57 (15 Sept 45, CI, 8, 3, 4)	Cas Rm Sq, Mex, T/O 8-85 (15 Sept 45, CI, 8, 3)	3 Tank Bns (each), T/O 17-85 (15 Nov 45, CI)	3 Arm'd Inf Bns (each), T/O 7-85 (15 Sept 45, CI, 8, 3, 4, 5)	Hq & Hq Btry, Arm'd Div Arty, T/O 6-160- 1 (8 Nov 44, CI)	3 Arm'd P.A. Bns (each), T/O 6-165, (28 Nov 44)	Total Arty	Arm'd Engr Bn, T/O 6-816 (20 Nov 44)	Arm'd Dis Trns, T/O 17-60 (15 Sept 45, CI)	Total Div	Atch'd Med	Atch'd Chap	Atch'd Band	Aggregate
1	Major general	1													1				1
2	Brigadier general			1											1				1
3	Colonel	2		1	1					1		1		1	6				6
4	Lieutenant colonel	12				1	1	1	1	1	1	4	1	3	29				29
5	Major	11	1	3	2	1	2	2	2	4	2	10	2	8	55	3			53
6	Major or captain	1													1				1
7	Captain	17	1	3		1	11	10	9	3	8	27	8	14	142		8		142
8	Captain or first lieutenant													15	15	28			51
9	First lieutenant	3	2	3		6	15	12	11	3	12	39	10	29	178				178
10	Second lieutenant		1	2		2	13	2	13		8	24	11	14	143				143
11	TOTAL COMMISSIONED	47	5	13	3	11	40	37	36	12	31	105	32	88	571	31	8		610
12	Warrant officer	8		1		3	3	3	3	1	2	7	3	8	52			2	54
13	Master sergeant	10		2		3	2	2	2	2	2	8	3	10	52				52
14	First sergeant		1			1	7	6	5	1	5	16	4	9	73				73
15	Technical sergeant	8	1	2	2	12	12	10	22	2	5	17	7	33	199				201
16	Staff sergeant	6	6	5	1	20	45	32	76	8	26	86	28	66	292	13		2	607
17	Sergeant	8	9	3		7	58	60	44	1	31	94	45	34	573				573
18	Corporal	1	5	1		2	55	75	23	8	46	146	31	34	570	13			583
19	Technician, grade 3	10				11				1	1	4		85	120	15			135
20	Technician, grade 4	44	16	16		42	106	89	35	10	53	169	61	209	1,051	15		14	1,080
21	Technician, grade 5	30	31	28	1	103	229	115	125	24	90	294	180	254	1,998	61		16	2,064
22	Private, first class	2	15	7	1	32	148	118	444	11	99	308	120	160	2,409	53		22	2,564
23	Private, including Basic		22 (6)	11 (4)		46 (14)	187 (44)	153 (35)	180 (78)	14 (4)	119 (24)	371 (76)	140 (30)	216 (61)	2,010 (578)	64 (14)			2,074 (592)
24	TOTAL ENLISTED	119	110	76	5	279	849	660	956	82	477	1,513	625	1,227	9,727	223		56	10,006
25	AGGREGATE	174	115	90	8	293	894	700	995	95	519	1,625	660	1,318	10,350	254	8	58	10,670

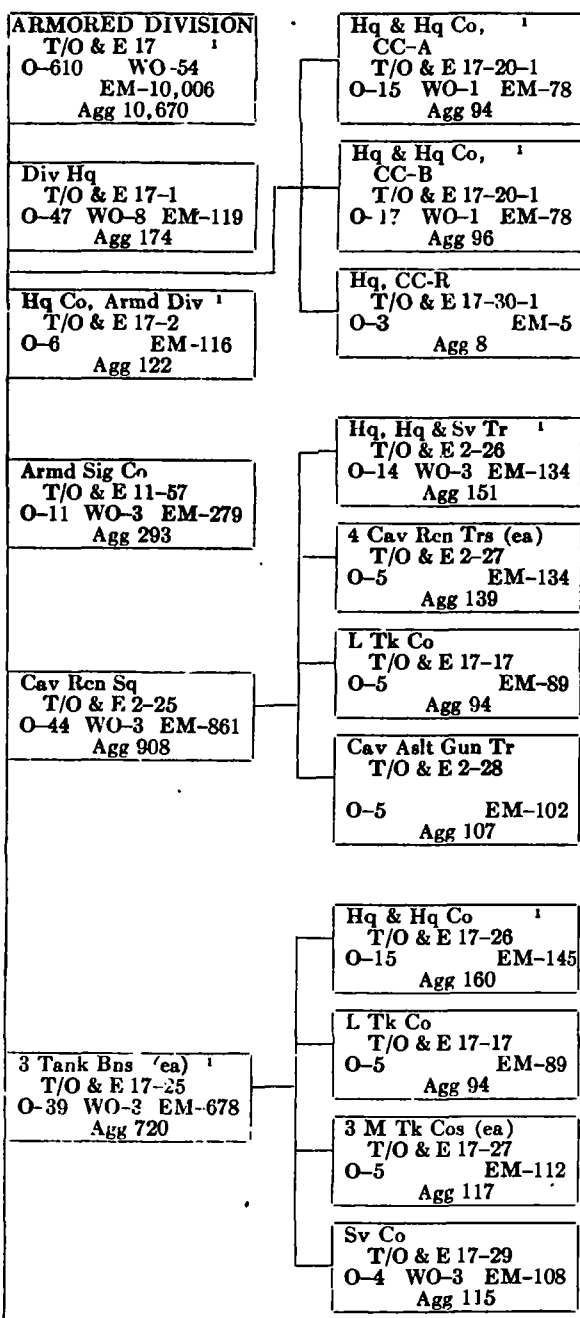
ORGANIZATION
SECTION V
ARMORED DIVISION

¹ In one headquarters, combat command only; 1 combat command commanded by brigadier general, 1 commanded by colonel.

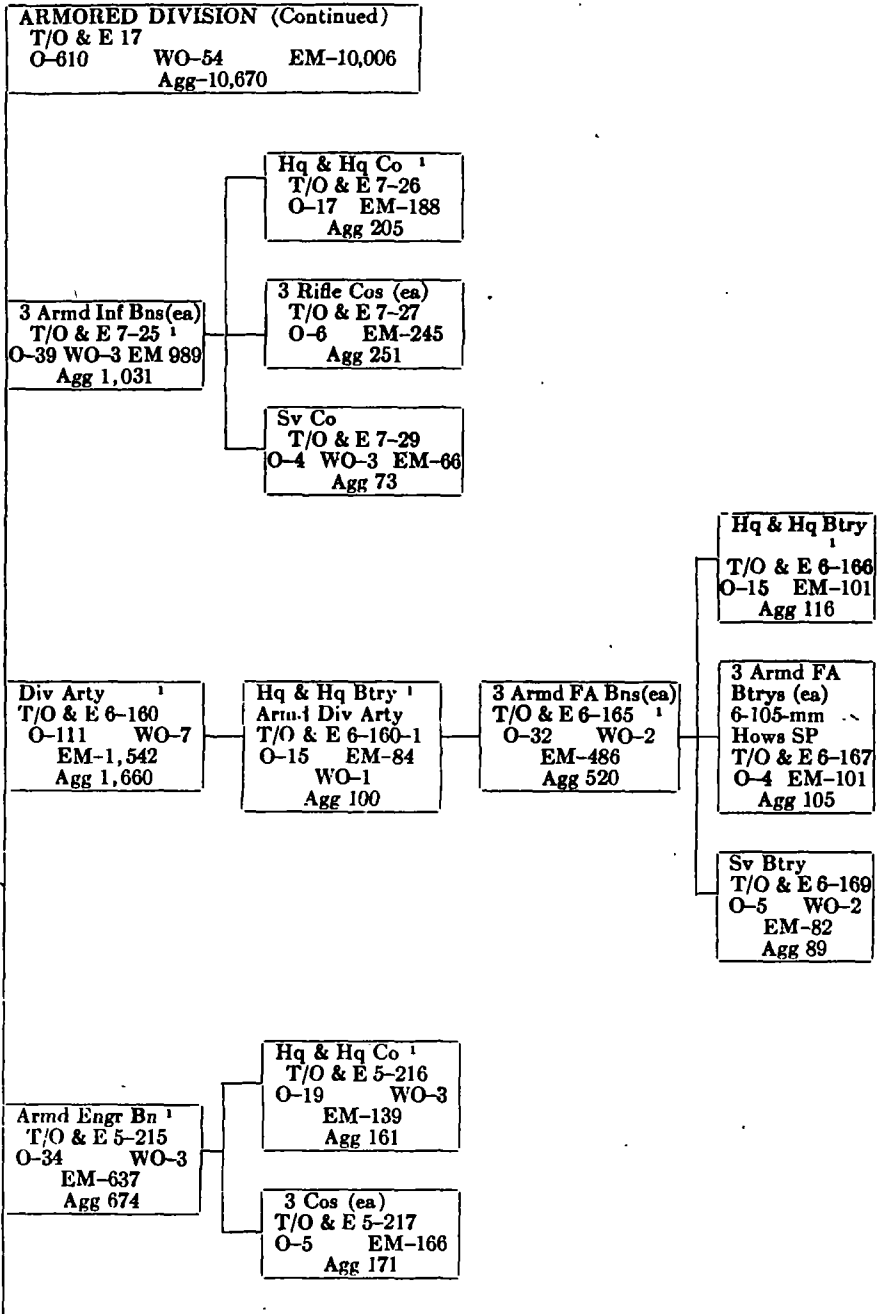
² Less 2 officers (aides) in combat command not authorized a brigadier general.

³ Includes 1 aide; authorized only in headquarters, combat command having brigadier general.

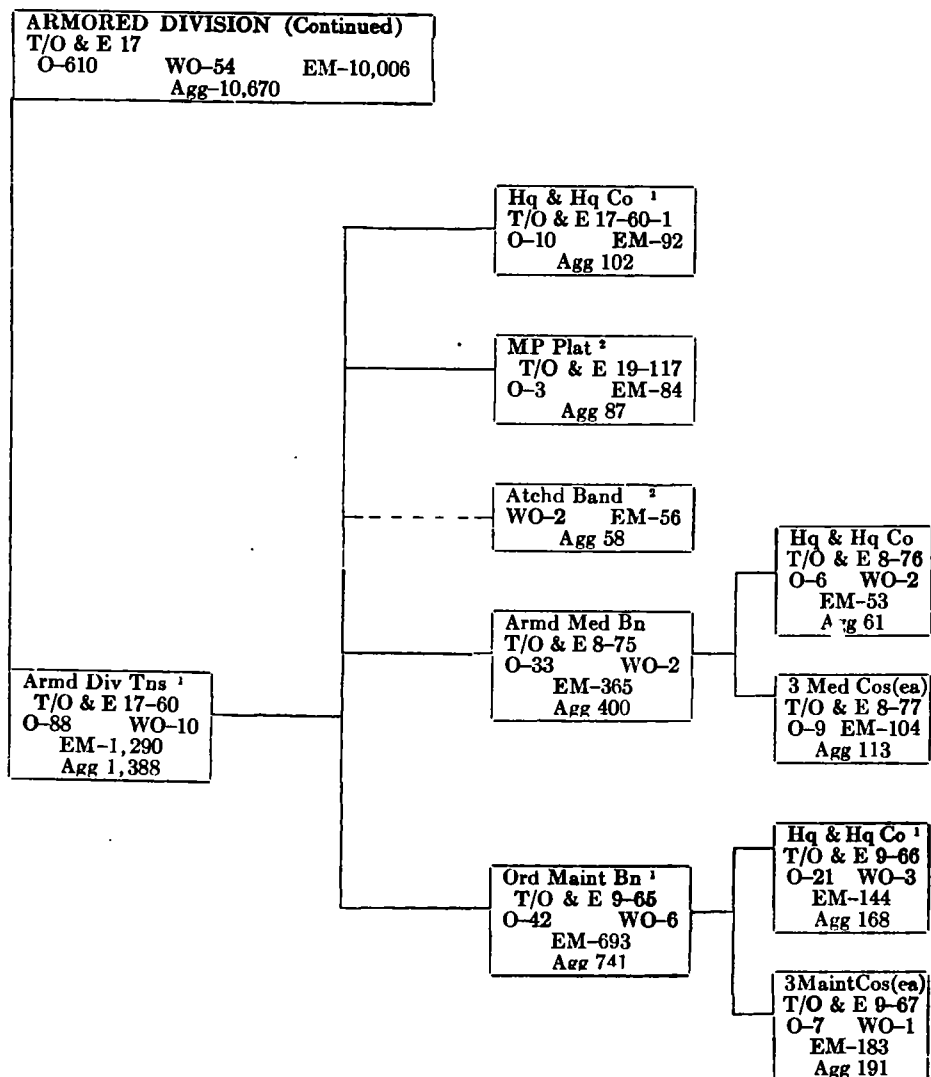
■ 115. DIAGRAM, ARMORED DIVISION (For computations involving Personnel) :



115. DIAGRAM, ARMORED DIVISION (Continued) :



115. DIAGRAM, ARMORED DIVISION (Continued) :

¹ Includes Atchd medical and chaplains.² Atchd Hq Co, Div Tns, for administration.



■ 116. SUMMARY OF ARMAMENT, ARMORED DIVISION (For computations involving Armament): ^{1 2 3 4}

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Unit	.30 cal Car- bine	.30 cal MG, H _e	.30 cal MG, L	.30 cal Rifle, M1	.30 cal Rifle, M1903	.45 cal SMG	.45 cal Pistol	.50 cal MG, HB	.57-mm Gun (turret mid)	.57-mm Gun, AT	Mortar, 8" M-3	2.36" Launch- er, rocket	60-mm Mortar	75-mm Gun, (tank)	75-mm How (Aslt Gun) SP	81-mm Mortar	105-mm How (SP)	105-mm How (tank)
2 Aggregate.....	5,051 ³	129	951	2,013	27	2,811	94	761	54	30	272	609	63	245	8	48	54	27
3 Div Hq & Hq Co, T/O & E 17-2 (13 Jan 45).....	208		15	9		38	22	10	2	3	3	10		3				
4 2 CC Hq & Hq Co, (ea) T/O & E 17-20-1 (13 Jan 45, C1).....	58 ³		9			27	5	7			3	8		3				
5 Armd Sig Co, T/O & E 11-57 (C1, 2, 3, 4).....	229		13			62	2	13				24						
6 Cav Rcn Sq, T/O & E 2-25. (15 Sept 43, C1, 2, 3).....	536		155	120		235	3	55	52		17	37	36	17	8	3		
7 4 Rcn Trs (ea), T/O & E 2-27 (C1, 2, 3).....	(85)		(25)	(26)		(28)		(3)	(12)			(4)	(9)					
8 Aslt Gun Tr, T/O & E 2-28 (C1, 2, 3).....	(69)		(6)	(16)		(22)		(15)				(11)			(8)	(1)		
9 Tk Co (L), T/O & E 17-17 (11 Nov 44).....	(24)		(36)			(70)		(21)			(17)	(2)		(17)		(1)		
10 Hq & Sv Tr, T/O & E 2-26 (C1, 2, 3).....	(103)		(13)			(31)	(3)	(7)	(4)			(8)				(1)		
11 3 Tk Bns (ea), T/O & E 17-25 (13 Nov 44, C1).....	240		170	20		437	3	105			76	35		70		9		6
12 Tk Co (L), T/O & E 17-17 (11 Nov 44).....	(24)		(35)			(70)		(20)			(17)	(2)		(17)				
13 3 Tk Cos (M) (ea), T/O & E 17-27 (18 Nov 44, C1).....	(25)		(37)			(92)		(20)			(18)	(3)		(17)		(2)		(1)
14 Hq & Hq Co, T/O & E 17-26 (18 Nov 44, C1).....	(70)		(13)	(20)		(47)	(3)	(13)			(5)	(12)		(2)		(3)		(3)
15 Sv Co, T/O & E 17-29 (18 Nov 44, C1).....	(71)		(11)			(44)		(12)				(12)				(2)		

116. SUMMARY OF ARMAMENT, ARMORED DIVISION (Continued) :

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
16	3 Armd Inf Bns (ea), T/O & E 7-25 (15 Sept 43, C1, 2, 3, 4, 5)	376	37	35	469	9	138	3	49		9	3	74	9			4		3
17	3 Rifle Cos (ea), T/O & E 7-27 (C1, 2, 3, 4)	(78)	(10)	(6)	(145)	(3)	(25)		(10)		(3)		(18)	(3)					
18	Hq & Hq Co, T/O & E 7-26 (C1, 2, 3, 4, 5)	(91)	(7)	(12)	(34)		(41)	(3)	(13)			(3)	(14)				(3)		(3)
19	Sv Co, T/O & E 7-29 (C1, 2, 3, 4, 5)	(51)		(5)			(22)		(6)				(6)				(1)		
20	Hq & Hq Btry, Div Arty, T/O & E 6-160-1 (22 Nov 44, C1)	65		1			21	9	5				6						
21	3 Armd FA Bns (ea), T/O & E 6-165 (22 Nov 44)	391		28			114	5	47			3	40		3		2	18	
22	3 Btrys 105-mm (ea), T/O & E 6-167 (22 Nov 44, C1)	(88)		(4)			(17)		(10)			(3)	(7)					(6)	
23	Hq & Hq Btry, T/O & E 6-166 (22 Nov 44, C1)	(68)		(10)			(33)	(5)	(9)				(11)		(3)				
24	Sv Btry, T/O & E 6-169 (22 Nov 44, C1, 2, 3)	(59)		(6)			(30)		(8)				(8)				(2)		
25	Armd Engr Bn, T/O & E 5-215 (20 Nov 44)	143	18	20	411		103	3	20				29						
26	Hq & Hq Co, T/O & E 5-216 (20 Nov 44)	(80)		(5)	(27)		(37)	(3)	(5)				(8)						
27	3 Engr Cos (ea), T/O & E 5-217 (20 Nov 44)	(21)	(6)	(5)	(128)		(22)		(5)				(7)						
28	MP Plat & Hq & Hq Co, Armd Div Tns, ⁴ T/O & E M-60-1 (C1, 2, 3, 4)	116		2	6		60	4	3				5						
29	Ord Maint Bn, T/O & E 9-65 (15 Dec 44)	556		28			171	5	38				35						
30	3 Maint Cos (ea), T/O & E 9-67 (15 Dec 44)	(151)		(6)			(40)		(9)				(8)						
31	Hq & Hq Co, T/O & E 9-66 (15 Dec 44)	(103)		(10)			(51)	(5)	(11)				(11)						
32	Armd Med Bn, T/O & E 8-75 (21 Nov 44)																		

¹ Includes vehicular weapons.

² Delete 2 carbines for CC Hq & Hq Co not including Brigadier General.

³ Includes 5 carbines and 3 pistols Reserve Comd not shown elsewhere.

⁴ Includes band—58 carbines.

■ 117. SUMMARY OF ORGANIC TRANSPORTATION, ARMORED DIVISIONS
(For computations involving Vehicles) : ¹

1	2	3	4	5	6	7	8	9	10	11	12
Unit	Aggregate	Dns Hq Co, T/O & E 17-2 (13 Jan 45)	2 Hq & Hq Co CC (m), T/O & E 17-40-1 (13 Jan 45)	Armd Sig Co, T/O & E 11- 57 (Cl, 2)	Cas Rec Sq, T/O & E 2-25 (Cl, 2, 3)	4 Rec Trs (m), T/O & E 2- 2-25 (Cl, 2, 3)	Adl Gun Tr, T/O & E 2-23 (Cl, 2, 3)	Tk Co (L), T/O & E 17-17 (18 Nov 44, Cl)	Hq & Ss Tr, T/O & E 2-26 (Cl, 2, 3)	3 Tk Bns (m), T/O & E 17- 26 (18 Nov 44, Cl)	Tk Co (L), T/O & E 17- 17 (18 Nov 44, Cl)
PASSENGER CARS, AMBULANCES, AND TRUCKS ¼-TON AND ¾-TON											
Ambulance, ¾-ton	43	1			1				(1)	1	
Car, medium, 5-passenger	1										
Truck, ¾-ton	489	12	9	22	110	(23)	(2)	(2)	(14)	26	(2)
Truck, ¾-ton, Wpn Carr	104	2			1				1	3	
SUB-TOTAL	637	15	9	22	112	(23)	(2)	(2)	(16)	30	(2)
TRUCKS, 2½-TON											
Ammunition	82		1		2				(2)	13	
Cargo (Ord Spare Parts)	38										
Dump	18										
Equipment and Supply (includes Engr and Sig)	18			3	5				(5)	14	
Fuel and Lube	79			1	7				(1)	6	(1)
Kitchen	85	2	1	2	7	(1)	(1)	(1)	(1)	1	
Maintenance (includes AP Maint)	37	1		1	2				(2)	3	
Medical Supply	8										
Ordinance Special Repair	29										
Personnel and Equipment	40				2				(2)	1	
Radio	6			6							
Ration	13				1				(1)	1	
Signal Corps repair	2			2							
Signal Supply	4										
Water	13				1				(1)	1	
Wire	3			2							
SUB-TOTAL	475	3	2	21	20	(1)	(1)	(1)	(14)	39	(1)
VEHICLES, HEAVY, NON-COMBAT											
Truck, heavy wrecking, M-1, 10-ton	25				1				(1)	2	
Truck, 6-ton, treadway bridge	6										
Truck, 40-ton, Tk recovery	9										
Vehicle, Tk recovery, M-32, wo/Arm	24									5	
Vehicle, Tk recovery, L, wo/Arm	6				3		(1)	(1)	(1)	1	(1)
SUB-TOTAL	70				4		(1)	(1)	(2)	8	(1)
MISCELLANEOUS											
Apparatus, decontaminating (4-ton 6 x 6)	3										
Compressor, air, Trk Mtd	4										
Tractor, Diesel engine driven, 50-65 DBHP	3										
Truck, surgical	6										
SUB-TOTAL	16										
COMBAT VEHICLES											
Car, Armd Utility, M-20, wo/Arm	1										
Car, Armd, M8, w/Arm	54	2			52	(12)			(4)		
Car, Personnel, H-T M3A2, wo/Arm	448	12	7	19	32	(4)	(10)	(1)	(5)	13	(1)
Carrier, H-T, 81-mm, M21, w/Arm	18									3	
Carriage Motor, 75-mm How, Assault gun	8				8		(8)				
Carriage Motor, 105-mm How, (Artillery), M7	54										
Tank, (M) 105-mm How, w/Arm	27									6	
Tank, (L), w/Arm	77	3	3		17			(17)		17	(17)
Tank, (M) w/Arm, 75-mm Gun	168									53	
SUB-TOTAL	855	17	10	19	109	(18)	(18)	(18)	(9)	92	(18)
TOTAL SELF-PROPELLED MOTOR VEHICLES	2,053	35	21	62	245	(40)	(22)	(22)	(41)	169	(22)

117. SUMMARY OF ORGANIC TRANSPORTATION, ARMORED DIVISIONS (Continued):

	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
1	3 T1 Co. (M), T/O & E 17-87 (18 Nov 44, CI)	Hq & Hq Co. T/O & E 17-88 (18 Nov 44, CI)	Sv Co. T/O & E 17-89 (18 Nov 44, CI)	3 Arm'd Inf Bn. (M), T/O & E 17-88 (CI, 2, 3, 4, 6)	3 Rife Co. (M), T/O & E 17-87 (CI, 2, 3, 4, 6)	Hq & Hq Co. T/O & E 17-88 (CI, 2, 3, 4, 6)	Sv Co. T/O & E 17-89 (CI, 2, 3)	Arm'd Div Arty. T/O & E 16-160 (22 Nov 44, CI)	Hq & Hq Bn. Arm'd Div Arty. T/O & E 16-160-1 (22 Nov 44, CI)	3 Arm'd Pz Bn. (M), T/O & E 16-165 (22 Nov 44, CI)	3 Bn. 103-mm (M), T/O & E 16-167 (22 Nov 44, CI)	Hq & Hq Bn. T/O & E 16-168 (22 Nov 44, CI)	Sv Bn. T/O & E 16-169 (22 Nov 44, CI)	Arm'd Eng Bn. T/O & E 16-215 (20 Nov 44)	Hq & Hq Co. T/O & E 16-216 (20 Nov 44)	3 Engr Co. (M), T/O & E 16-217 (20 Nov 44)	Hq & Hq Co. Arm'd Div Arty. T/O & E 17-60-1 (CI, 2, 3, 4)	Ord Maint Bn. T/O & E 16-218 (16 Dec 44)	3 Maint Co. (M), T/O & E 16-219 (16 Dec 44)	Hq & Hq Co. T/O & E 16-220 (16 Dec 44)	Arm'd Med Bn. T/O & E 16-221 (21 Nov 44)	3 Med Co. (M), T/O & E 16-222 (21 Nov 44)	Hq & Hq Co. T/O & E 16-223 (21 Nov 44)
2		(1)		1		(1)		3		(1)		(1)		2	(2)								
3		(1)		2		(1)		7		(2)		(1)		2	(2)								
4		(1)		3		(1)		29		(7)		(1)		8	(12)								
5		(1)		3		(1)		29		(8)		(1)		8	(12)								
6		(1)		3		(1)		102		(15)		(14)		37	(19)								
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117. SUMMARY OF ORGANIC TRANSPORTATION, ARMORED DIVISIONS (Continued) :

1	Unit	2	3	4	5	6	7	8	9	10	11	12
		Aggregate	Dys Hq Co, T/O & E 17-2 (18 Jan 45)	Hq & Hq Co CC (ca), T/O & E 17-20-1 (18 Jan 45)	Armed Sig Co, T/O & E 11- 57 (Cl, 2)	Cav Rcn Sq, T/O & E 2-25 (Cl, 2, 3)	4 Rcn Tps (ca), T/O & E 2- 27 (16 Jul 45, Cl, 2, 3)	Art Gun Tr, T/O & E 2-28 (Cl, 2, 3)	Tk Co (L), T/O & E 17-17 (18 Nov 44, Cl)	Hq & Sv Tr, T/O & E 2-28 (Cl, 2, 3)	3 Tks Bns (ca), T/O & E 17- 25 (18 Nov 44, Cl)	Tk Co (L), T/O & E 17- 17 (18 Nov 44, Cl)
TRAILERS												
46	¼-ton, cargo.....	28		2							6	(1)
47	1-ton, cargo.....	403	3	2	11	34	(5)	(1)	(1)	(12)	32	
48	1-ton, ammunition, M-10.....	192		1		14		(12)		(2)	17	(2)
49	1-ton, 250-gallon, water.....	6										
50	Signal, K-52.....	6			6							
51	Utility, 2½-ton, Type I.....	9										
52	20-ton, low bed.....	3										
53	40-ton, Tk recovery.....	9										
54	Welder equipment, Trk Mtd.....	1										
55	TOTAL TRAILERS.....	657	3	5	17	48	(5)	(13)	(1)	(14)	55	(3)
56	Airplanes, liaison.....	8										
57	TOTAL CONVEYANCES, ALL TYPES.....	2,718	38	26	79	293	(46)	(35)	(23)	(55)	224	(25)

¹ Includes Atchd Medical. All T/O & E's dated 9/15/43 except as noted.

² Carried on Trailer, Low Bed, 20-ton, on march.

³ SWB.

⁴ Includes MP Plat.

117. SUMMARY OF ORGANIC TRANSPORTATION, ARMORED DIVISIONS
(Continued) :

	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
	3 T th Co. (M) (en), T/O & B 17-27 (18 Nov 44, C1)	Hq & Hq Co, T/O & B 17-28 (18 Nov 44, C1)	3 rd Co, T/O & B 17-29 (18 Nov 44, C1)	3 rd Arm ^d Inf Bn (en), T/O & B 7-26 (C1, 2, 3, 4, 6)	3 rd Rifle Co. (en), T/O & B 7-27 (C1, 2, 3, 4, 6)	Hq & Hq Co, T/O & B 7-28 (C1, 2, 3, 4, 6)	3 rd Co, T/O & B 7-29 (C1, 2, 3, 4, 6)	Arm ^d Div Arty, T/O & B 6-160 (28 Nov 44, C1)	Hq & Hq Btry, Arm ^d Div Arty, T/O & B 6-160-1 (28 Nov 44, C1)	3 rd Arm ^d FA Bn (en), T/O & B 6-165 (28 Nov 44, C1)	3 rd Btry 105-mm (en), T/O & B 6-167 (28 Nov 44, C1)	Hq & Hq Btry, T/O & B 6-168 (28 Nov 44, C1)	3 rd Btry, T/O & B 6-169 (28 Nov 44, C1)	Arm ^d Engr Bn, T/O & B 6-215 (20 Nov 44)	Hq & Hq Co, T/O & B 6-216 (20 Nov 44)	3 rd Engr Co. (en), T/O & B 6-217 (20 Nov 44)	Hq & Hq Co Arm ^d Div T th O & B 17-20-1 (C1, 2, 3, 4)	Ord Maint Bn, T/O & B 9-25 (15 Dec 44)	3 rd Maint Co. (en), T/O & B 9-27 (15 Dec 44)	Hq & Hq Co, T/O & B 9-28 (15 Dec 44)	Arm ^d Med Bn, T/O & B 8-75 (15 Dec 44)	Med Co. (en), T/O & B 8-77 (15 Dec 44)	Hq & Hq Co, T/O & B 8-78 (15 Dec 44)
46	(1)	(1)	(1)	21	(3)	(2)	(10)	67	(3)	(1)	(2)	(1)	(12)	24	(12)	(4)	9	75	(15)	(30)	17	(3)	(8)
47	(2)	(4)	(22)	8		(4)	(4)	99	(4)	(21)	(3)		(9)	2	(2)							6	
48			(13)							(33)													
49																							
50														9									
51														3									
52															(1)								
53																		9	(3)				
54														1	(1)								
55	(3)	(7)	(36)	29	(3)	(6)	(14)	172	(7)	(55)	(10)	(4)	(21)	39	(15)	(8)	9	84	(18)	(30)	23	(5)	(8)
56								8	(2)	(2)		(2)											
57	(26)	(41)	(60)	162	(28)	(42)	(36)	525	(30)	(165)	(27)	(33)	(51)	150	(57)	(31)	63	255	(57)	(84)	105	(27)	(24)



■ 118. TABLE OF ORGANIZATION AND EQUIPMENT No. 7 (24 Jan 1945) (For Reference only):

INFANTRY DIVISION

Designation ----- Infantry Division

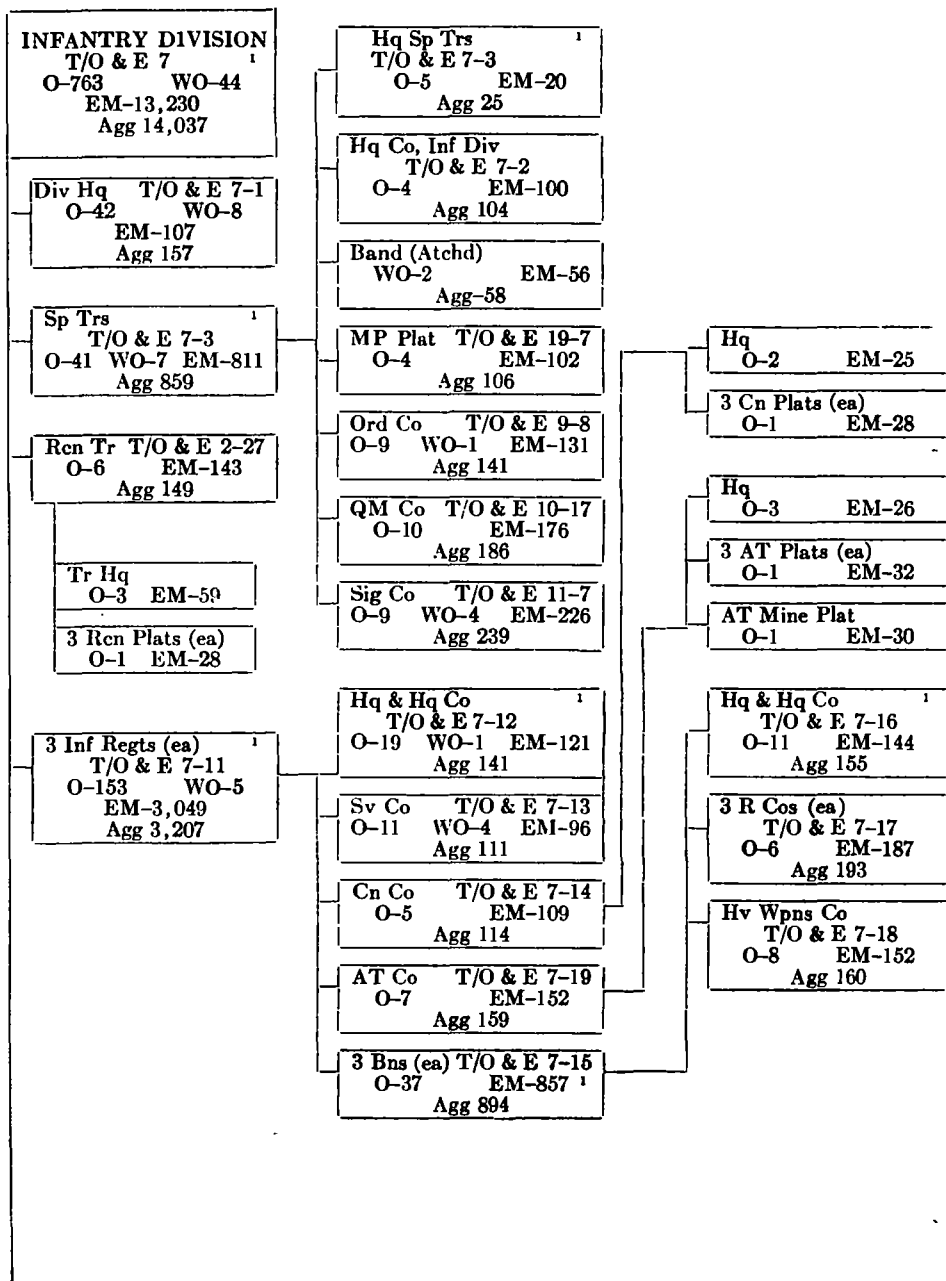
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
	Unit	Div Hq T/O & E, 7-1 (15 Jan 45, Cl)	Hq Sq Tr	Hq Co Inf Div, T/O & E, 7-9 (15 Jan 45)	MP Pltd, T/O & E, 10-7 (18 Sep 44, Cl)	Ord L Maind Co, T/O & E 9-8 (17 Nov 44)	QM Co, T/O & E 10-17 (1 Jan 45)	Sig Co, T/O & E 11-7 (11 Dec 45, Cl, E)	Cav Rec Tr, Mech, T/O & E 9-87 (15 Jul 45, Cl, E, S)	3 Inf Regts (each), T/O & E 7-11 (28 Feb 44, Cl)	Div Artg, T/O & E 8-10 (27 Sept 44)	Engg C Bn, T/O & E 5-16 (15 Mar 44, Cl)	Med Bn, T/O & E 8-15 (14 Feb 45)	Total Div	Atchd Med	Atchd Chap	Atchd Band	Aggregate
1																		
2	Major general	1												1				1
3	Brigadier general	1												2				2
4	Colonel	2												6				6
5	Lieutenant colonel	11	1			1	1	1		1	5		1	34				34
6	Major	10			1		1	1		6	11	2	2	47	5			52
7	Major or captain	1												1				1
8	Captain	11	1	2		2	3	1	1	28	43	7	6	161				161
9	Captain or first lieutenant												16	16	26	13		55
10	First lieutenant	4		1	2	3	3	5	2	59	61	11	6	275	9			284
11	Second lieutenant	1		1	1	2	2	1	3	42	21	6	3	167				167
12	TOTAL COMMISSIONED	42	2	4	4	9	10	9	6	140	143	27	34	710	40	13		783
13	Warrant officer	8				1		4		5	9	3	2	42			2	44
14	Master sergeant	10				1	1	3		5	10	3	1	44				44
15	First sergeant			1		1	1	1	1	19	21	4	4	91				91
16	Technical sergeant	6	1	1		4	2	8	1	64	18	6	4	243	5		2	250
17	Staff sergeant	4		5	2	8	7	11	7	241	104	25	21	918	14			934
18	Sergeant	6	1	2	10	5	11	10	8	205	96	32	23	819	5			824
19	Corporal	1		4	9	1	18	2	11	93	233	32	13	603	14			617
20	Technician, grade 3	11				16		8			5		9	49	33			82
21	Technician, grade 4	40		8	1	24	7	34	17	83	169	50	33	622	43		14	679
22	Technician, grade 5	26	2	18	1	46	41	68	41	148	303	119	52	1161	93		16	1270
23	Private, first class	3	1	28	38	9	40	35	25	1479	457	145	114	5332	106		22	5460
24	Private, including		1	33	41	16	48	46	32	556	553	174	133	2835	144			2979
25	Basic			(5)	(4)	(7)	(9)	(11)	(7)	(219)	(104)	(29)	(22)	(855)	(40)			(895)
26	TOTAL ENLISTED	107	7	100	102	131	176	226	143	2923	1959	590	407	12717	457		56	13230
27	AGGREGATE	157	9	104	106	141	186	239	149	3068	2111	620	443	13469	497	13	58	14037

ORGANIZATION

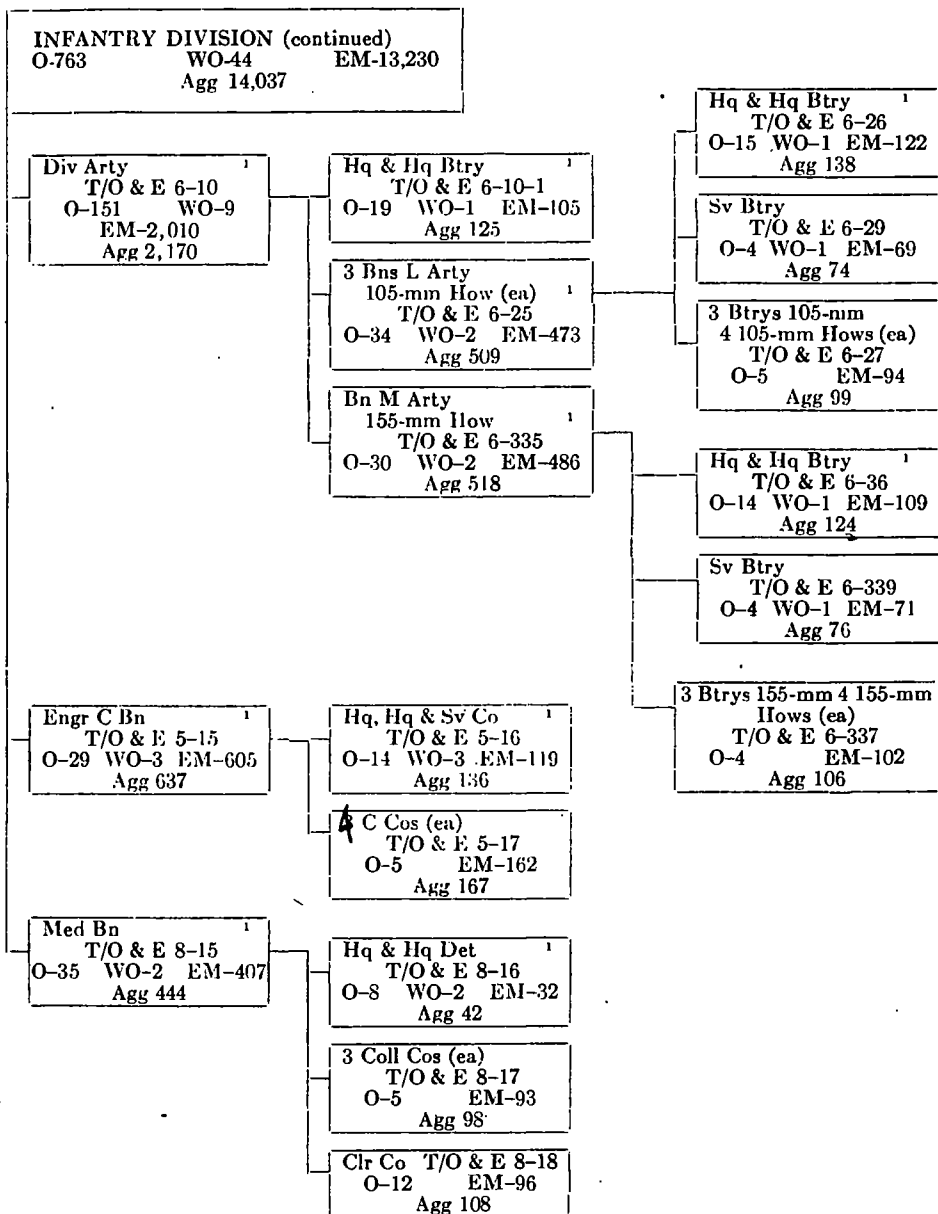
SECTION VI

INFANTRY DIVISION

■ 119. INFANTRY DIVISION—DIAGRAM (For computations involving Personnel):



119. INFANTRY DIVISION—DIAGRAM (Continued) :



¹ Totals include attached medical and chaplains.

■ 120. SUMMARY OF ARMAMENT—INFANTRY DIVISION (For computations involving Armament):

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Unit	.50 cal Carbine	.50 cal MG, H ₁	.50 cal MG, L	.50 cal Rifle, automatic	.50 cal Rifle, M1	.50 cal Rifle, M1C (Sniper)	.45 cal. SMG	.45 cal Pistol	.50 cal MG, HB, flexible	87-mm Gun	87-mm Gun, Towed	8 3/4" Launch- er, Rocket	60-mm Mortar	81-mm Mortar	105-mm How, M2A1	105-mm How, M5	165-mm How, 155-1	Grenade Launcher
2 Total Div.....	5,158	90	134	405	6,268	81	295	1,228	237	12	57	558	90	54	36	18	12	2,131
3 Div Hq T/O & E 7-1.(13 Jan 45, CI).....	108				20			20										
4 Sp Trs T/O & E 7-3 (13 Jan 45):																		
5 Hq, Sp Tr.....	8							1										
6 Hq Co Inf Div, T/O & E 7-2, (13 Jan 45).....	101				48			13	4		3	6						53
7 MP Plat Inf Div, T/O & E 19-7, (12 Sept 44, CI).....	79				26			1										52
8 Ord L Maint Co, T/O & E 9-8, (17 Nov 44).....	97				29		13	2	5			5						6
9 QM Co Inf Div, T/O & E 10-17, (19 Feb 44, CI).....	143				41			2	13			5						89
10 Sig Co Inf Div, T/O & E 11-7, (11 Dec 43, CI, 2).....	153				49		35	2	5			6						100
11 Cav Ren Tr Mecz, T/O & E 2-27, (15 Jul 43, CI, 2, 3).....	93		26		26		30		3	13		5	9					40
12 3 Inf Regt (ea), T/O & E 7-11, (26 Feb 44, CI).....	536	24	36	135	1,831	27	63	293	35		18	112	27	18		6		544
13 Hq & Hq Co Inf Regt, T/O & E 7-12, (26 Feb 44, CI).....	(24)				(76)		(3)	(4)	(2)			(4)						(14)
14 Sv Co Inf Regt, T/O & E 7-13, (26 Feb 44, CI).....	(30)				(80)			(1)	(9)			(8)						(37)
15 Inf Cn Co, T/O & E 7-14, (26 Feb 44, CI, 2).....	(77)				(37)				(3)			(4)				(6)		(19)
16 Inf AT Co, 57-mm Gun, T/O & E 7-19 (26 Feb 44, CI).....	(48)				(60)			(45)	(3)		(9)	(9)						(13)
17 3 Inf Bn (ea), T/O & E 7-15, (26 Feb 44, CI).....	(219)	(8)	(12)	(45)	(524)	(9)	(20)	(81)	(6)		(3)	(29)	9	6				(152)
18 Hq & Hq Co Inf Bn, T/O & E 7-16, (26 Feb 44, CI, 2).....	(53)		(6)		(51)		(2)	(17)	(2)		(3)	(8)						(11)
19 3 Inf R Co (ea), T/O & E 7-17, (26 Feb 44, CI, 2).....	(28)		(2)	(16)	(143)	(3)	(6)	(10)	(1)			(5)	(3)					(37)
Inf Hv Wpn Co, T/O & E 7-18, (26 Feb 44, CI).....	(82)	(8)			(44)			(34)	(1)			(6)		(6)				(30)

120. SUMMARY OF ARMAMENT—INFANTRY DIVISION (Continued) :

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
20	Div Arty Mts Inf Div, T/O & E 6-10, (27 Sept 44).....	1,806						12	305	89			166			36		12	48
21	Hq & Hq Btry Div Arty, T/O & E 6-10-1, (27 Sept 44, C1).....	(85)							(29)	(5)			(6)						(2)
22	3 FA Bn 105-mm How (ea), T/O & E 6-25, (27 Sept 44).....	(428)						(3)	(69)	(21)			(40)			(12)			(12)
23	Hq & Hq Btry FA Bn 105-mm Hnw, T/O & E 6-26, (27 Sept 44).....	(99)							(27)	(5)			(6)						(6)
24	3 FA Btry 105-mm How (ea), T/O & E 6-27, (27 Sept 44, C1).....	(89)						(1)	(10)	(4)			(8)			(4)			(2)
25	Sv Btry FA Bn 105-mm How, T/O & E 6-29, (29 Sept 44, C1).....	(62)							(12)	(4)			(10)						
26	FA Bn 155-mm Hnw, T/O & E 6-335, (27 Sept 44).....	(437)						(3)	(69)	(21)			(40)					(12)	(10)
27	Hq & Hq Btry FA Bn 155-mm Hnw, T/O & E 6-36, (27 Sept 44, C1).....	(86)							(26)	(5)			(6)						(4)
28	3 FA Btry Mts 155-mm Hnw (ea), T/O & E 6-337, (27 Sept 44, C1).....	(96)						(1)	(10)	(4)			(8)					(4)	(2)
29	Sv Btry Mts FA Bn 155-mm How, T/O & E 6-339, (27 Sept 44, C1).....	(63)							(13)	(4)			(10)						
30	Bn Engr C, T/O & E 5-15, (13 Mar 44, C1).....	65	18			536		16	3	12			29						111
31	Hq & Hq Sv Co Engr C Bn, T/O & E 5-16, (13 Mar 44, C1).....	(29)				(83)		(4)	)	(3)			(2)						(39)
32	3 Engr C Co (ea), T/O & E 5-17, (13 Mar 44, C1).....	(12)	(6)			(151)		(4)		(3)			(9)						(24)
33	Med Bn, T/O & E 8-15, (14 Feb 45).....																		
34	Hq & Hq Det Med Bn, T/O & E 8-16, (14 Feb 45).....																		
35	3 Call Co Med Bn (ea), T/O & E 8-17, (14 Feb 45).....																		
36	Clr Co Med Bn, T/O & E 8-18, (14 Feb 45).....																		

¹ Includes Atchd Band.

² Includes 13-30 Cal MG, L mounted on Car Armored, Light M8.

³ Mounted on Car Armored, Light M8.

■ 121. SUMMARY OF ORGANIC TRANSPORTATION—INFANTRY DIVISION¹
(For computations involving Vehicles):

1	2	3	4	5	6	7	8	9	10	11	12	13	14
Vehicle and Normal Use	Total Dis	Sp Tra, T/O & E 7-3 (13 Jan 45)											
		Hq Sp Trs	Hq Co Inf Div, T/O & E 7-8 (18 Jan 45)	MP Plat Inf Div, T/O & E 19-7 (18 Sept 44)	Ord L Maint Co, T/O & E 8-5 (17 Nov 44)	QM Co Inf Div, T/O & E 10-17 (19 Feb 44, C1)	Sig Co Inf Div, T/O & E 11-7 (11 Dec 43, C1, 2)	Cas Rem Tr Mcc, T/O & E 2-27 (15 Jul 43, C1, 2, 3)	9 Inf Regt (ca), T/O & E 7-11 (26 Feb 44, C1)	Hq & Hq Co Inf Regt, T/O & E 7-12 (26 Feb 44, C1)	58 Co Inf Regt, T/O & E 7-13 (26 Feb 44, C1)	Inf Cn Co, T/O & E 7-14 (26 Feb 44, C1)	Inf AT Co, 57-mm Gun, T/O & E 7-19 (26 Feb 44, C1)
PASSENGER CARS, AMBULANCES & TRUCKS, 1/4 and 3/4-TON													
2 Ambulance, 3/4-ton.....	30												
3 Car, 5-passenger, medium.....	1												
4 Truck, 1/4-ton 4x4.....	647	2	28	23	8	6	10	23	139	(19)	(6)	(6)	(6)
5 Truck, Atchd Chpp, 1/4-ton, 4x4.....	11	1							3	(3)			
6 Truck, Atchd Med, 1/4-ton, 4x4.....	16			4	5	2	19		4	(4)			
7 Truck, 3/4-ton, Wpn Carr.....	208								12	(1)	(2)	(1)	(2)
8 Truck, Atchd Med, 3/4-ton, Wpn Carr.....	14								3				
9 SUB-TOTAL.....	927	3	29	27	13	8	35	23	161	(27)	(8)	(7)	(8)
TRUCKS, 1 1/2-TON													
10 Ammunition and Pioneer tools.....	9								3				
11 Antitank mines.....	6								2				(2)
12 Command & Operatin.....	4						1		1				(1)
13 Kitchen.....	2												
14 Personnel & Orgn Equip.....	5		2						1			(1)	
15 Prime mover (57-mm gun nr 105-mm Hw)	75		3						24			(6)	(9)
16 Signal communication.....	3						3						
17 Atchd Medical.....	1												
18 SUB-TOTAL.....	105		5				4		31			(7)	(12)
TRUCKS, 2 1/2-TON SWB													
19 Ammunition.....	30												
20 Unit maintenance.....	9												
21 Prime mover (105-mm Hw)	36												
22 Signal communication.....	6												
23 SUB-TOTAL.....	81												
TRUCKS, 2 1/2-TON LWB													
24 Ammunition.....	52								9		(6)	(3)	
25 Antitank mines.....	2												
26 Assault boats.....	1												
27 Cargo (general purpose).....	48					48							
28 Command & Operatin.....	9				1	1	1						
29 Kitchen.....	91		2		1	1	1	1	19		(19)		
30 Medical supply.....	3												
31 Personnel & Orgn Equip.....	19		1				2		2		(2)		
32 Platoon tools.....	9												
33 Service maintenance.....	15				12								
34 Shnp, Mts, general purpose.....	3						3						
35 Signal communication.....	13						2						
36 Squad tools and personnel dump trucks.....	27						10		1	(1)			
37 Unit maintenance.....	13					1			2		(2)		
38 Water supply.....	3												
39 Atchd Medical.....	3								1	(1)			
40 SUB-TOTAL.....	311		3		14	51	19	1	34	(2)	(20)	(3)	
TRUCKS, 4-TON, 6-TON, 10-TON													
41 4-ton wrecker.....	4				2								
42 6-ton prime mover for Tir low-bed 20-ton.....	3												
43 10-ton wrecker, M1.....	1				1								
44 SUB-TOTAL.....	8				3								

121. SUMMARY OF ORGANIC TRANSPORTATION—INFANTRY DIVISION¹ (Continued):

	16	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
	3 Inf Bn (en), T/O & E 7-16 (28 Feb 44, C1)	Hq & Hq Co, Inf Bn, T/O & E 7-16 (28 Feb 44, C1)	3 Inf Bn Co (en), T/O & E 7-17 (28 Feb 44, C1, 2)	Inf H & Wm Co, T/O & E 7-18 (28 Feb 44, C1)	Div Arty, Mtl Inf Div, T/O & E 6-10 (27 Feb 44)	Hq & Hq Btry Div Arty, T/O & E 6-10-1 (27 Sept 44, C1)	3 PA Bn 105-mm How (en), T/O & E 6-25 (27 Sept 44, C1)	Hq & Hq Btry PA Bn 105-mm How T/O & E 6-26 (27 Sept 44)	3 PA Btry 105-mm How (en), T/O & E 6-27 (27 Sept 44, C1)	3 PA Btry PA Bn 105-mm How T/O & E 6-28 (15 Jul 45, C1, 2, 3, 4, 5)	PA Bn 165-mm Tr-Dr (1), T/O & E 6-355 (27 Sep 44)	Hq & Hq Btry PA Bn 165-mm How T/O & E 6-356 (27 Sept 44, C1)	3 PA Btry, Mtl, 165-mm How (en), T/O & E 6-357 (27 Sept 44, C1)	3 Btry, Mtl, PA Bn, 165-mm How, T/O & E 6-359 (27 Sept 44, C1)	Eng C Bn, T/O & E 5-15 (13 Mar 44, C1)	Hq & Hq Co, Eng C Bn, T/O & E 5-16 (13 Mar 44, C1)	3 Eng C Co (en), T/O & E 5-17 (13 Mar 44, C1)	Med Bn, T/O & E 5-15 (15 Feb 45)	Hq & Hq Det Med Bn, T/O & E 6-16 (15 Jul 45, C1, 2, 3, 4)	3 Coll Co Med Bn (en), T/O & E 8-17 (14 Feb 45)	Chr Co Med Bn, T/O & E 6-18 (14 Feb 45)
2																					
3																					
4	(34)	(9)	(2)	(19)	99	(6)	(25)	(11)	(4)	(2)	(18)	(7)	(3)	(2)	16	(4)	(4)	30			(10)
5					4		(1)	(1)			(1)	(1)						9			
6					114	(10)	(26)	(11)	(4)	(3)	(26)	(11)	(4)	(3)	13	(7)	(2)	15	(1)	(2)	(1)
7	(2)	(1)		(1)	5	(1)	(1)	(1)			(1)	(1)									
8	(1)	(1)																			
9	(37)	(11)	(2)	(20)	222	(17)	(53)	(24)	(5)	(5)	(46)	(20)	(7)	(5)	29	(11)	(6)	55	(5)	(16)	(4)
10	(1)	(1)																			
11																					
12																					
13																		2			(2)
14																					
15	(3)	(3)																			
16																					
17																1	(1)				
18	(4)	(4)														1	(1)	2			(2)
19					30		(9)		(2)	(3)				(3)							
20					9	(1)	(2)			(2)				(2)							
21					36		(12)		(4)												
22					6	(2)	(1)	(1)		(1)		(1)		(1)							
23					51	(3)	(24)	(1)	(6)	(5)	(6)	(1)		(5)							
24				24		(6)			(6)	(6)			(6)	1	(1)	2					
25																1					
26																					
27					6	(2)	(1)	(1)		(1)		(1)		(1)							
28					21	(1)	(5)	(1)	(1)	(1)		(1)		(1)		4	(1)	3			
29																					
30																					
31					4		(1)			(1)				(1)		9	(3)	6			(6)
32																1	(1)				
33																					
34																					
35																					
36																					
37					3					(3)			(1)		27	1	(1)	2		(2)	
38															1	(3)	(9)				
39															3						
40					58	(3)	(13)	(2)	(1)	(8)	(16)	(2)	(2)	(8)	49	(10)	(13)	14	(5)	(1)	(6)
41					1							(1)		(1)	1	(1)					
42															3		(1)				
43																					
44					1					(1)	(1)			(1)	4	(1)	(1)				

121. SUMMARY OF ORGANIC TRANSPORTATION—INFANTRY DIVISION¹ (Continued):

1	2	3	4	5	6	7	8	9	10	11	12	13	14
Vehicle and Normal Use	Total Div	Sp Trs T/O & E 7-8, (15 Jan 45)											
		Hq Sp Trs	Hq Co Inf Div, T/O & E 7-8 (15 Jan 45)	MP Plnt Inf Div, T/O & E 19-7 (19 Sept 44)	Ord L Maint Co, T/O & E 9-3 (17 Nov 44)	QM Co Inf Div, T/O & E 10-17 (19 Feb 44, CI)	Sig Co Inf Div, T/O & E 11-7 (11 Dec 43, CI, S)	Can Rem Tr Mnt, T/O & E 2-37 (15 Jul 43, CI, S, S)	S Inf Regt (ad), T/O & E 7-11 (26 Feb 44, CI)	Hq & Hq Co Inf Regt, T/O & E 7-18 (26 Feb 44, CI)	S Co Inf Regt, T/O & E 7-18 (26 Feb 44, CI)	Inf Cn Co, T/O & E 7-14 (26 Feb 44, CI)	Inf AT Co, 57-mm Gun, T/O & E 7-19 (26 Feb 44, CI)
COMBAT VEHICLES													
45 Car, Armd, L, M-8, w/Armt.....	12							12					
46 Car, Armd; M-20, w/Armt.....	1		1										
47 Car, half-track, w/o Armt.....	4							4					
48 SUB-TOTAL.....	17		1					16					
MISCELLANEOUS VEHICLES													
49 Compressor, air, motorized, truck-mounted.....	4												
50 Tractor, diesel, engine-driven, 55-65 DBHP.....	3												
51 Tractor, medium, M-5.....	18												
52 SUB-TOTAL.....	25												
53 Total self-propelled land vehicles.....	1,474	3	38	27	30	59	58	40	226	(29)	(37)	(17)	(20)
AIRPLANES													
54 Liaison.....	10												
TRAILERS, 1-TON CARGO													
55 Ammunition.....	19								6			(3)	
56 Antitank mines.....	8								2				(2)
57 Cargo (general purpose).....	48					48							
58 Command & operation.....	10				1	1	2						
59 Kitchen.....	90		2		1	1	1	19			(19)		
60 Medical supply.....	3												
61 Organisational Equip.....	17		2					3					
62 Platoon tools.....	9												
63 Service maintenance.....	14				11		3				(1)		
64 Signal communication.....	12						9		1				
65 Unit maintenance.....	7												
66 Water supply.....	3												
67 Atchd Medical.....	1												
68 SUB-TOTAL.....	241		4		13	50	17	5	26	(1)	(19)	(3)	(2)
MISCELLANEOUS TRAILERS													
69 Ammunition, M-21.....	6												
70 Ammunition, M-10.....	57												
71 Cargo, ¼-ton.....	298	1	2						70	(4)			
72 Semi-trailer, low-bed, 20-ton.....	3												
73 Signal, K&Z.....	1												
74 Utility, pole type, 2½-ton.....	10						1						
75 Water tank, 250-gal.....	5												
76 Welding set No. 1.....	1												
77 Atchd Chap & Med, ¼-ton.....	19	1							4	(4)			
78 SUB-TOTAL.....	400	2	2				1		74	(8)			
79 TOTAL TRAILERS.....	641	2	6		13	50	18	5	102	(9)	(19)	(3)	(2)
80 TOTAL VEHICLES.....	2,125	5	44	27	43	109	76	45	328	(38)	(56)	(20)	(22)

121. SUMMARY OF ORGANIC TRANSPORTATION—INFANTRY DIVISION ¹ (Continued):

	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
	3 Tug Bn (ea), T/O & E 7-15 (28 Feb 44, C1)	Hq & Hq Co Inf Bn, T/O & E 7-9 (26 Feb 44, C1)	3 Inf R Cos (ea), T/O & E 7-17 (26 Feb 44, C1, 2)	Inf Hs Wpns Co, T/O & E 7-18 (26 Feb 44, C1)	Div Arty, Mtr Inf Div, T/O & E 6-10 (27 Feb 44)	Hq & Hq Btry Div Arty, T/O & E 6-10-1 (27 Sept 44, C1)	3 FA Bns 105-mm How (ea), T/O & E 8-26 (27 Sept 44, C1)	Hq & Hq Btry FA Bn 105-mm How T/O & E 8-26 (27 Sept 44)	3 FA Btry 105-mm How (ea), T/O & E 8-27 (27 Sept 44, C1)	Sv Btry FA Bn, 105-mm How T/O & E 8-28 (15 Jul 43, C1, 2, 3, 4, 5)	FA Bn 165-mm Tr-Dr (1), T/O & E 8-335 (27 Sept 44)	Hq & Hq Btry FA Bn, 165-mm How T/O & E 8-336 (27 Sept 44, C1)	3 FA Btry, Mtr, 165-mm How (ea), T/O & E 8-337 (27 Sept 44, C1)	Sv Btry, Mtr, FA Bn, 165-mm How, T/O & E 8-339 (27 Sept 44, C1)	Engr C Bn, T/O & E 8-16 (13 Mar 44)	Hq & Hq Sv Co, Engr C Bn, T/O & E 8-16 (13 Mar 44, C1)	3 Engr C Cos (ea), T/O & E 8-17 (13 Mar 44, C1)	Med Bn, T/O & E 8-16 (16 Feb 45)	Hq & Hq Det Med Bn, T/O & E 8-16 (15 Jul 43, C1, 2, 3, 4)	3 Coll Cos Med Bn (ea), T/O & E 8-17 (14 Feb 45)	Ctr Co Med Bn, T/O & E 8-18 (14 Feb 45)
45																					
46																					
47																					
48																					
49																					
50																					
51					18						(18)		(6)		4	(1)	(1)				
52					18						(18)		(6)		7	(1)	(2)				
53	(41)	(15)	(2)	(20)	380	(23)	(90)	(27)	(15)	(18)	(87)	(24)	(15)	(18)	90	(24)	(22)	71	(10)	(17)	(10)
54					10	(2)	(2)	(2)			(2)	(2)									
55	(1)	(1)													1	(1)					
56															2	(2)					
57					6	(2)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	4	(1)	(1)	2			(2)
58					21	(1)	(5)	(1)	(1)	(1)	(5)	(1)	(1)	(1)	4	(1)	(1)	3	(3)		
59					5	(1)	(1)			(1)	(1)			(1)	1	(1)	(3)	4		(4)	
60															9						
61															1						
62															1						
63															3	(1)					
64															1	(3)					
65					5	(1)	(1)			(1)	(1)			(1)	1	(1)					
66															3	(1)					
67															1	(1)					
68	(1)	(1)			37	(5)	(8)	(2)	(1)	(3)	(8)	(2)	(1)	(3)	22	(0)	(4)	9	(3)		(6)
69					6						(6)		(2)								
70	(22)	(2)	(2)	(14)	57	(3)	(15)	(5)	(2)	(9)	(12)	(3)	(1)	(9)	9		(3)	6		(2)	
71					70	(3)	(18)	(5)	(4)	(1)	(13)		(3)	(1)	3		(1)				
72																					
73																					
74															10	(1)	(3)				
75															1	(1)		5		(1)	(2)
76																					
77					5	(1)	(1)	(1)			(1)	(1)						1	(1)		
78	(22)	(2)	(2)	(14)	138	(4)	(34)	(6)	(6)	(10)	(32)	(4)	(6)	(10)	23	(2)	(7)	12	(1)	(3)	(2)
79	(23)	(3)	(2)	14	175	(9)	(42)	(8)	(7)	(13)	(40)	(6)	(7)	(13)	45	(12)	(11)	21	(4)	(3)	(8)
80	(64)	(18)	(4)	(34)	65	(34)	(134)	(37)	(22)	(31)	(129)	(32)	(22)	(31)	135	(36)	(33)	92	(14)	(20)	(18)

¹ Includes Atchd Med and Ch.

² Carried on Semi Trailer, Low Bed, 20 ton.



ORGANIZATION

122-123

SECTION VII

MISCELLANEOUS UNITS

ANTIAIRCRAFT ARTILLERY UNITS

■ 122. ORGANIZATION—ANTIAIRCRAFT ARTILLERY BRIGADE:¹

	1	2	3
1	Item	Hq & Hq Btry T/O & E 44-10-1 (20 Oct 44)	AAA Group ²
2	Officers.....	14	
3	Warrant officers.....	2	
4	Enlisted men.....	63	
5	AGGREGATE.....	79	
6	.30 cal carbine.....	30	
7	.30 cal rifle, M-1.....	32	
8	.45 cal gun, submachine.....	11	
9	.45 cal pistol, automatic.....	6	
10	.50 cal gun, machine, HB, flexible.....	1	
11	Trailer, ¼-ton.....	3	
12	Trailer, 1-ton.....	3	
13	Truck, ¼-ton.....	4	
14	Truck, ¾-ton, weapons carrier.....	4	
15	Truck, 2½-ton, cargo.....	3	
16	TOTAL MOTOR VEHICLES.....	11	

¹AAA Brig consists of Hq & Hq Btry AAA Brig, & 2 or more AAA Gps.

²See Par 123.

■ 123. ORGANIZATION—ANTIAIRCRAFT ARTILLERY GROUP:¹

	1	2	3
1	Item	Hq & Hq Btry T/O & E 44-12 (29 Apr 44, CI) ²	AAA Bns ³
2	Officers.....	13	
3	Enlisted men.....	60	
4	AGGREGATE.....	73	
5	.30 cal carbine.....	22	
6	.30 cal rifle, M-1.....	36	
7	.45 cal gun, submachine.....	10	
8	.45 cal pistol, automatic.....	5	
9	Trailer, ¼-ton.....	5	
10	Truck, ¼-ton.....	4	
11	Truck, ¾-ton, weapons carrier.....	5	
12	Truck, 2½-ton, cargo.....	1	
13	TOTAL MOTOR VEHICLES.....	10	

¹AAA Gp consists of Hq & Hq Btry AAA Gp, and 2 or more AAA Bns.

²Includes Atchd Ch.

³See Pars 124-131, inclusive.

■ 124. ORGANIZATION—ANTIAIRCRAFT ARTILLERY AUTOMATIC WEAPONS
BATTALION MOBILE, T/O & E 44-25 (22 Apr 44, C1, 2, 3) :

	1	2	3	4	5	6
1	Item	Hq & Hq Btry, T/O & E 44-26' (22 Apr 44, C1, 2, 3)	4 AW Btrys (ea), T/O & E 44-27 (22 Apr 44, C1, 2) ²	Total	Atchd Med & Ch	Aggre- gate
2	Officers.....	8	6	32	4	36
3	Warrant officers.....	3	.....	3	.....	3
4	Enlisted men.....	89	164	745	17	762
5	AGGREGATE.....	100	170	780	21	801
6	.30 cal carbine.....	25	17	93	.....	93
7	.30 cal rifle, M-1.....	47	129	563	.....	563
8	.45 cal gun, submachine.....	25	24	121	.....	121
9	.45 cal pistol, automatic.....	3	.....	3	.....	3
10	.50 cal gun, machine, HB, flexible.....	2	5	22	.....	22
11	40-mm gun, automatic.....	.....	8	32	.....	32
12	2.36" launcher, rocket.....	.....	8	32	.....	32
13	Mount Tlr, multiple, cal .50, machine gun, M55 ¹.....	.....	8	32	.....	32
14	Trailer, 1/4-ton.....	12	1	16	.....	16
15	Trailer, 1-ton.....	9	11	53	.....	53
16	Truck, 1/4-ton.....	12	3	24	1	25
17	Truck, 3/4-ton, weapons carrier.....	4	2	12	.....	12
18	Truck, 2 1/2-ton, cargo.....	9	19	85	1	86
19	TOTAL MOTOR VEHICLES.....	25	24	121	2	123

¹Trailer, Organic armament—4 cal .50 MG (AA).

■ 125. ORGANIZATION—ANTIAIRCRAFT ARTILLERY AUTOMATIC WEAPONS BATTALION, SEMIMOBILE, T/O & E 44-125 (19 Apr 44, C1, 2, 3) :

	1	2	3	4	5	6
1	Item	Hq & Hq Btry, T/O & E 44-126 (19 Apr 44, C1, 2)	4 AW Btrys (ea) T/O & E 44-127 (19 Apr 44, C1, 2)	Total	Atchd Med & Ch	Aggre- gate
2	Officers.....	9	6	33	4	37
3	Warrant officers.....	2		2		2
4	Enlisted men.....	100	158	732	16	748
5	AGGREGATE.....	111	164	767	20	787
6	30 cal, carbine.....	27	16	91		91
7	30 cal, rifle, M-1.....	52	145	632		632
8	45 cal, gun, submachine.....	29	3	41		41
9	45 cal, pistol, automatic.....	3		3		3
10	50 cal, gun, machine, HB, flexible.....	5		5		5
11	40-mm gun, automatic.....		8	32		32
12	2.36" launcher, rocket.....		8	32		32
13	Mount, Tlr, multiple, cal .50 machine gun, M55 ¹		8	32		32
14	Trailer, 1/4-ton.....	6		6	1	7
15	Trailer, 1-ton.....	19	1	23		23
16	Truck, 1/4-ton.....	8	1	12		12
17	Truck, 3/4-ton, weapons carrier.....	2	1	6	1	7
18	Truck, 2 1/2-ton, cargo.....	19	1	23		23
19	TOTAL MOTOR VEHICLES.....	29	3	41	1	42

¹Trailer, Organic armament—4 cal .50 MG (AA).

■ 126. ORGANIZATION—ANTI-AIRCRAFT ARTILLERY AUTOMATIC WEAPONS BATTALION, SELF-PROPELLED, T/O & E 44-75 (19 Apr 44, C1) :

1	2	3	4	5	6
<i>Item</i>	<i>Hq & Hq Btry, T/O & E 44-76 (19 Apr 44)</i>	<i>4 AW Btrys (ea) T/O & E 44-77 (19 Apr 44)</i>	<i>Total</i>	<i>Atchd Med & Ch</i>	<i>Aggregate</i>
2 Officers.....	9	6	33	4	37
3 Warrant officers.....	2		2		2
4 Enlisted men.....	106	136	650	13	663
5 AGGREGATE.....	117	142	685	17	702
6 .30 cal carbine.....	25	16	89		89
7 .30 cal gun, machine, light.....	2	2	10		10
8 .30 cal rifle, M1.....	58	101	462		462
9 .45 cal gun, submachine.....	31	25	131		131
10 .45 cal pistol, automatic.....	3		3		3
11 .50 cal gun, machine, HIB, flexible, M2.....	6	3	18		18
12 Car, half-track w/o Arm.....	5	3	17		17
13 Carriage, motor, combination gun ¹		8	32		32
14 Carriage, motor, multiple gun ²		8	32		32
15 Trailer, ammunition.....		8	32		32
16 Trailer, 1/4-ton.....	9		9		9
17 Trailer, 1-ton, cargo.....	13	18	85		85
18 Truck, 1/4-ton.....	12	4	28	1 ³	29
19 Truck, 3/4-ton, ambulance.....				1	1
20 Truck, 3/4-ton, Wpn Carr.....				1	1
21 Truck, 2 1/2-ton, cargo.....	13	2	21		21
22 Truck, Hv Wrecker, 10-ton, M1.....	1		1		1
23 TOTAL MOTOR VEHICLES.....	31	25	131	3	134

¹Organic armament—2 cal .50 MG (AA) ; 1 37-mm gun (AA).

²Organic armament—4 cal .50 MG (AA).

³If Atzdy by theater.

■ 127. ORGANIZATION—ANTIAIRCRAFT ARTILLERY GUN BATTALION, MOBILE, T/O & E 44-15 (22 Apr 44, C1, 2, 3) :¹

	1	2	3	4	5	6
1	Unit	Hq & Hq Btry, T/O & E 44-16 (22 Apr 44)	4 Gun Btrys (ea) T/O & E 44-17 (22 Apr 44)	Total	Atchd Med & Ch	Aggregate
2	Officers.....	9	4	25	4	29
3	Warrant officers.....	3		3		3
4	Enlisted men.....	97	146	681	13	694
5	AGGREGATE.....	109	150	709	17	726
6	.30 cal carbine.....	28	15	88		88
7	.30 cal rifle, M-1.....	57	114	513		513
8	.45 cal gun, submachine.....	21	22	109		109
9	.45 cal pistol, automatic.....	3		3		3
10	.50 cal gun, machine, AA.....		4	16		16
11	.50 cal gun, machine, HB, flexible, M-2.....	3	9	39		39
12	2.36" rocket launcher.....		2	8		8
13	90-mm gun, AA.....		4	16		16
14	Trailer, K78 or K75.....	1	1	5		5
15	Trailer, 1/4-ton.....	4	6	28		28
16	Trailer, 1-ton.....	10	8	42		42
17	Trailer, generator, M7.....	1	2	9		9
18	Truck, 1/4-ton.....	4	3	16	1	17
19	Truck, 3/4-ton, weapons carrier.....	4	3	16		16
20	Truck, 2 1/2-ton, cargo.....	10	8	42	1	43
21	Truck, 2 1/2-ton, 15' special body.....	1	2	9		9
22	Truck, Hv Wrecker, 10-ton, M1.....	1		1		1
23	Truck, 4-5-ton, Tractor.....	1	1	5		5
24	Tractor, 18-ton, high speed.....		5	20		20
25	Detector unit.....	1	1	5		5
26	Generator Unit w/Tlr.....	1	3	13		13
27	TOTAL MOTOR VEHICLES.....	21	22	109	2	111

¹ Figures shown in this table are for Type A unit (equipped with SCR-584 and 90-mm gun mounts M2). For Type B unit (equipped with SCR-545) see T/O & E 44-15.

■ 128. ORGANIZATION—ANTI-AIRCRAFT ARTILLERY GUN BATTALION SEMI-MOBILE, T/O & E 44-115 (26 Apr 44, C1, 2, 3) : ²

	1	2	3	4	5	6
1	Unit	Hq & Hq Btry, T/O & E 44-116 (26 Apr 44, C1, 2)	4 Gun Btrys (ea) T/O & E 44-117 (26 Apr 44, C1, 2)	Total	Atchd Med & Ch	Aggre- gate
2	Officers.....	9	4	25	3	28
3	Warrant officers.....	2		2		2
4	Enlisted men.....	109	120	589	12	601
5	AGGREGATE.....	120	124	616	14	631
6	.30 cal carbine.....	29	14	85		85
7	.30 cal rifle, M-1.....	59	107	487		487
8	.45 cal gun, submachine.....	29	3	41		41
9	.45 cal pistol, automatic.....	3		3		3
10	.50 cal gun, machine, AA.....		4	16		16
11	.50 cal gun, machine, HB, flexible.....	10	1	14		14
12	2.36" Launcher, rocket.....		2	8		8
13	90-mm gun, AA, mobile ¹		4	16		16
14	Trailer, K78.....	1	1	5		5
15	Trailer, M18.....	2		2		2
16	Trailer, 1/4-ton.....	3		3	1	4
17	Trailer, 1-ton.....	10	1	14		14
18	Truck, 1/4-ton.....	5	1	9		9
19	Truck, 3/4-ton, weapons carrier.....	3	1	7	1	8
20	Truck, 2 1/4-ton, cargo.....	10	1	14		14
21	Truck, 2 1/4-ton, 15' special body.....	2		2		2
22	Truck, 4-ton, wrecker.....	1		1		1
23	Truck, 4-5-ton, tractor.....	2		2		2
24	Tractor, high speed, 18-ton.....	6		6		6
25	Detector unit.....	1	1	5		5
26	TOTAL MOTOR VEHICLES.....	29	3	41	1	42

¹Gun Btrys may be equipped with 120-mm gun, AA, M1.

²Figures shown in this table are for Type A unit (radio set SCR-584) equipped with 90-mm gun. For Type A unit with 120-mm gun and for Type B unit (radio set SCR-545) with either 90- or 120-mm gun, see T/O & E 44-115.

■ 129. ORGANIZATION—ANTIAIRCRAFT ARTILLERY SEARCHLIGHT BATTALION, T/O & E 44-135 (23 May 44 C1) : ¹

	1	2	3	4	5	6
1	Item	Hq & Hq Btry, Type B, T/O & E 44-136 (23 May 44, C1)	3 SL Btrys (ea), Type B, T/O & E 44-138 (28 Dec 43, C1)	Total	Atchd Med & Ch	Aggregate
2	Officers.....	9	5	24	4	28
3	Warrant officers.....	2		2		2
4	Enlisted men.....	99	218	753	14	767
5	AGGREGATE.....	110	223	779	18	797
6	.30 cal carbine.....	26	22	92		92
7	.30 cal rifle, M-1.....	72	179	609		609
8	.45 cal gun, submachine.....	10	22	76		76
9	.45 cal pistol, automatic.....	2		2		2
10	.50 cal gun, machine, AA.....		12	36		36
11	.50 cal gun, machine, HB, flexible.....	1	4	13		13
12	2.36" Rocket Launcher.....		18	54		54
13	Trailer, ¼-ton.....	2		2	1	3
14	Trailer, 1-ton.....	2	1	5		5
15	Trailer, 4-ton (tilting type).....		4	12		12
16	Trailer, K28B.....		6	18		18
17	Trailer, K-34-D.....		6	18		18
18	Truck, ¼-ton.....	3	3	12	1	13
19	Truck, ¾-ton, weapons carrier.....	3	4	15	1	16
20	Truck, 2½-ton, cargo.....	2	3	11		11
21	Truck, 2½-ton, SWB.....		8	24		24
22	Truck, 4-ton, wrecker.....	1		1		1
23	Truck, 6-ton, prime mover.....	1	4	13		13
24	Detector unit.....		6	18		18
25	Searchlight unit.....		12	36		36
26	Generating unit, w/Tlr.....		12	36		36
27	TOTAL MOTOR VEHICLES.....	10	22	76	2	78

¹Figures shown in this table are for Type B unit (equipped with SCR 268-C). For Type A (equipped with SCR 268-B) and Type C (equipped with Radar Set An/TPL-1 C) see T/O & E 44-135.

■ 130. ORGANIZATION—ANTI-AIRCRAFT ARTILLERY BALLOON BATTALION, VLA, T/O & E 44-325 (24 Jun 43, C1, 2) :

	1	2	3	4	5	6	7
	Item	Hq and Hq Btry, T/O & E 44-326 (23 Jun 43, C1, 2)	3 Balloon Btrys (ea) T/O & E 44-327 23 Jun 43, C1, 2, 3, 4)	Total	Atchd Med	Atchd Ch	Aggr-gate
2	Officers.....	8	6	26	3	1	30
3	Warrant officers.....	1		1			1
4	Enlisted men.....	90	238	804	11		815
5	AGGREGATE.....	99	244	831	14	1	846
6	.30 cal carbine.....	22	13	61			61
7	.30 cal rifle, M-1.....	62	215	707			707
8	.45 cal gun, submachine.....	13	15	58			58
9	.45 cal pistol, automatic.....	2	1	5			5
10	.50 cal gun, machine, HB, flexible.....	2	1	5			5
11	Trailer, 1/4-ton.....				1	1	2
12	Trailer, 1-ton.....	8	3	17			17
13	Truck, 1/4-ton.....	3	5	18		1	19
14	Truck, 3/4-ton, weapons carrier.....	1	7	22	1		23
15	Truck, 2 1/2-ton, cargo.....	8	3	17			17
16	Balloon, barrage, VLA, M-1.....	45	120	405			405
17	Generator, hydrogen, M-1.....	2		2			2
18	Winch, balloon, portable, BB VLA, M-1.....	15	50	165			165
19	Reel, payout, VLA (amphibious) ¹	15	50	165			165
20	TOTAL MOTOR VEHICLES.....	12	15	57	1	1	59

¹Issued for amphibious operations only.

■ 131. ORGANIZATION—ANTI-AIRCRAFT ARTILLERY MACHINE GUN BATTERY, SEPARATE, AIRBORNE, T/O & E 44-217 (20 Aug 43, C1) :

1	Unit	AAA MG Btry
2	Officers.....	5
3	Warrant officers.....	
4	Enlisted men.....	85
5	AGGREGATE.....	90
6	.30 cal carbine.....	5
7	.50 cal gun, machine, AA.....	12
8	.45 cal gun, submachine.....	58
9	.30 cal rifle, M1.....	24
10	Trailer, 1/4-ton.....	2
11	Truck, 1/4-ton.....	2
12	TOTAL MOTOR VEHICLES.....	2

SEPARATE ARMORED UNITS

■ 132. ORGANIZATION—ARMORED GROUP:¹

1	Item	2	3
		Hq & Hq Co Armd Gp T/O & E 17-22 (11 Nov 44, C1) ²	Armd Bns ³
2	Officers.....	17	.....
3	Warrant officers.....	1	.....
4	Enlisted men.....	84	.....
5	AGGREGATE.....	102	.....
6	.30 cal carbine.....	68	.....
7	.30 cal gun, machine, light, flexible.....	3	.....
8	.45 cal gun, submachine.....	26	.....
9	.45 cal pistol, automatic.....	5	.....
10	.50 cal gun, machine, HB, flexible.....	4	.....
11	2.36" launcher, rocket.....	8	.....
12	Car, half-track, M3A2, wo/Armt.....	7	.....
13	Tank, light, w/Armt ⁴	3	.....
14	Trailer, 1/4-ton.....	1	.....
15	Trailer, 1-ton.....	2	.....
16	Trailer, ammunition, M10.....	1	.....
17	Truck, 1/4-ton.....	8	.....
18	Truck, 2 1/2-ton.....	2	.....
19	TOTAL MOTOR VEHICLES.....	20	.....

¹Armd Gp consists of Hq & Hq Co Armd Gp, and 2 or more Armd Bns.

²Includes attached Med and Ch.

³See Pars 115 and 133-136.

⁴Includes: 2 .30 cal MGs; 1 .50 cal MG; 1 2" Mortar M3 and 1 75-mm gun, Tank.

■ 133. ORGANIZATION—*Light Tank Battalion T/O & E 17-15, (11 Nov 44, C1)* :

1	2	3	4	5	6	7
Item	Hq & Hq Co T/O & E 17-16	3 L Tk Cos (ea) T/O & E 17-17	Sv Co T/O & E 17-19	Total	Atchd Med	Aggre- gate
2 Officers.....	13	5	4	32	2	34
3 Warrant Officers.....			3	3		3
4 Enlisted men.....	125	89	88	480	15	495
5 AGGREGATE.....	138	94	95	515	17	532
6 .30 cal carbine, M1.....	70	24	66	208		208
7 .30 cal rifle, M1.....	20			20		20
8 .30 cal gun, machine, light, flexible.....	3		6	9		9
9 .45 cal gun, submachine.....	45	70	29	284		284
10 .45 cal pistol, automatic.....	3			3		3
11 .50 cal gun, machine, HB, flexible.....	5	2	6	17		17
12 2.36" launcher, rocket.....	12	2	9	27		27
13 Carriage, motor, 75-mm How w/Armt.....	3			3		3
14 Carrier, half-track, 81-mm mortar, M21, w/Armt.....	3			3		3
15 Car, half-track, personnel, M3A2, w/o Armt.....	8	1	1	12		12
16 Tank, light, w/Armt.....	3	17		54		54
17 Trailer, ammunition, M10.....	4		6	10		10
18 Trailer, ¼-ton.....		1		3		3
19 Trailer, 1-ton.....	2	2	12	20		20
20 Truck, ¼-ton.....	11	2	3	20	3	23
21 Truck, ¾-ton, ambulance.....					1	1
22 Truck, ¾-ton, weapons carrier.....			2	2	1	3
23 Truck, 2½-ton, cargo.....	1	1	19	23		23
24 Truck, heavy, wrecking, M1.....			2	2		2
25 Vehicle, Tank Recovery light.....		1	2	5		5
26 TOTAL MOTOR VEHICLES.....	29	22	29	124	5	129

■ 133. ORGANIZATION—*Light Tank Battalion T/O & E 17-15, (11 Nov 55 C1) (Continued)* :

SUMMARY OF ARMAMENT

	1	2	3	4
1	<i>Weapon</i>	<i>Non-Vehicle</i>	<i>Organic to combat vehicle</i>	<i>Aggregate</i>
2	.30 cal carbine, M1.....	208		208
3	.30 cal rifle, M1.....	20		20
4	.30 cal gun, machine, light, flexible.....	9	113	122
5	.45 cal gun, submachine.....	284		284
6	.45 cal pistol, automatic.....	3		3
7	.50 cal gun, machine, HB, flexible.....	17	65	82
8	2" mortar, M3.....		54	54
9	2.36" launcher, rocket.....	27		27
10	81-mm mortar.....		5	5
11	75-mm How.....		3	3
12	75-mm gun, Tk.....		54	54

■ 134. ORGANIZATION, TANK BATTALION (Separate) T/O & E 17-25
(18 Nov 44, C1) :

	1	2	3	4	5	6	7	8
1	Item	Hq & Hq Co T/O & E 17-26	3 M Tk Cos (ea) T/O & E 17-27	L Tk Co T/O & E 17-17	So Co T/O & E 17-29	Total	Atchd Med	Aggre- gate
2	Officers.....	13	5	5	4	37	2	39
3	Warrant Officers.....				3	3		3
4	Enlisted men.....	127	112	89	108	660	18	678
5	AGGREGATE.....	140	117	94	115	700	20	720
6	.30 Cal carbine, M1.....	70	25	24	71	240		240
7	.30 Cal Rifle, M1.....	20				20		20
8	.30 Cal Gun, machine, light, flex.....	3			9	12		12
9	.45 Cal Pistol, automatic.....	3				3		3
10	.45 Cal Gun, submachine.....	47	92	70	44	437		437
11	.50 Cal Gun, machine, HB, flex.....	5	1	2	10	20		20
12	2.36" Launcher, Rocket.....	12	3	2	12	35		35
13	Carrier (half-track), 81-mm mortar, M21 w/Arm.....	3				3		3
14	Car (half-track), personnel, M3A1, wo/Arm.....	8	1	1	1	13		13
15	Tank, light, w/Arm.....			17		17		17
16	Tank, medium, w/Arm.....	3	17			54		54
17	Tank, medium, w/Arm—(105-mm How).....	3	1			6		6
18	Trailer, ammunition, M10.....	4			13	17		17
19	Trailer, ¼-ton.....	1	1	1	1	6		6
20	Trailer, 1-ton.....	2	2	2	22	32		32
21	Truck, ¼-ton.....	11	2	2	3	22	4	26
22	Truck, ¾-ton Ambulance.....						1	1
23	Truck, ¾-ton, Wpus carrier.....				2	2	1	3
24	Truck, 2½-ton cargo.....	1	1	1	34	39		39
25	Truck, heavy wrecker.....				2	2		2
26	Vehicle, tank recovery, light.....			1		1		1
27	Vehicle, tank recovery M32.....		1		2	5		5
28	TOTAL MOTOR VEHICLES.....	29	23	22	44	164	6	170

SUMMARY OF ARMAMENT

	1	2	3	4
1	Weapon	Non- Vehicular	Organic to Combat Vehicle	Aggregate
2	.30 Cal carbine.....	240		240
3	.30 Cal Gun, machine, light, flexible.....	12	158	170
4	.50 Cal Gun, machine, HB, flexible.....	20	85	105
5	.45 Cal Gun, submachine.....	437		437
6	.45 Cal pistol, automatic.....	3		3
7	.30 Cal Rifle, M1.....	20		20
8	2" mortar, M3.....		77	
9	81-mm mortar.....		9	
10	2.36" launcher, rocket.....	35		35
11	75-mm gun, Tk.....		71	71
12	105-mm How, Tk.....		6	6

■ 135. ORGANIZATION—AMPHIBIAN TANK BATTALION (T/O & E 17-115, 29 Jan 44, C1) :

	1	2	3	4	5	6
1	Item	Hq & Hq and Sv Co T/O & E 17-116	4 Amph Tk Cos (each) T/O & E 17-117	Total	Atchd Med	Aggre- gate
2	Officers.....	10	5	30	3	33
3	Warrant Officers.....	4		4		4
4	Enlisted men.....	93	150	693	18	711
5	AGGREGATE.....	107	155	727	21	748
6	.30 cal carbine.....	69	34	205		205
7	.45 cal gun, submachine.....	35	118	507		507
8	.45 cal pistol, automatic.....	3	3	15		15
9	2.36" launcher, rocket.....	4	3	16		16
10	Trailer, 1-ton.....	4	1	8		8
11	Truck, ¼-ton.....	2	2	10	4	14
12	Truck, ¾-ton, weapons carrier.....	2		2	1	3
13	Truck, 2½-ton, cargo.....	8	2	16		16
14	Truck, 10-ton, Hv Wrecker, M1.....	1		1		1
15	Vehicle, LVT, cargo (Armd), wo/Arm.....	4	2	12		12
16	Vehicle, LVT, combat (Armd), w/Arm ¹	3	18	75		75
17	TOTAL MOTOR VEHICLES.....	20	24	116	5	121

¹Includes: 3 .30 cal MGs, 1 .50 cal MG, 1 75-mm How (or 1 37-mm gun, AT).

■ 136. ORGANIZATION—AMPHIBIAN TRACTOR BATTALION, T/O & E 17-125, (29 Apr 44, C1) :

	1	2	3	5	5	6
1	Item	Hq & Hq and Sv Co T/O & E 17-126	2 Trac Cos (each) T/O & E 17-127	Total	Atchd Med	Aggre- gate
2	Officers.....	9	5	19	1	20
3	Warrant Officers.....	2		2		2
4	Enlisted men.....	91	189	469	11	480
5	AGGREGATE.....	102	194	490	12	502
6	.30 cal carbine.....	69	137	343		343
7	.30 cal gun, machine, light, flexible.....	34	102	238		238
8	.45 cal gun, submachine.....	30	54	138		138
9	.45 cal pistol, automatic.....	3	3	9		9
10	.50 cal gun, machine, HB, flexible.....	34	102	238		238
11	2.36" launcher, rocket.....	4	3	10		10
12	Trailer, 1-ton.....	3	2	7		7
13	Truck, 1/4-ton.....	4	1	6	3	9
14	Truck, 3/4-ton, weapons carrier.....				1	1
15	Truck, 2 1/2-ton, cargo.....	8	2	12		12
16	Truck, 10-ton, Hv Wrecker, M1.....	1		1		1
17	Vehicle, LVT, un-armored, w/oArm.....	17	51	119		119
18	TOTAL MOTOR VEHICLES.....	30	54	138	4	142

CAVALRY UNITS

■ 137. ORGANIZATION—CAVALRY GROUP, MECHANIZED:¹

	1	2	3
1	Item	Hq & Hq Tr (T/O & E 2-22) (11 Nov 44)	Rcn Sq Mecz ²
2	Officers.....	15	.....
3	Enlisted men.....	59	.....
4	AGGREGATE.....	74	.....
5	.30 cal carbine.....	44	.....
6	.30 cal gun, machine, light.....	4	.....
7	.30 cal rifle, M1.....	9	.....
8	.45 cal gup, submachine.....	13	.....
9	.45 cal pistol, automatic.....	5	.....
10	.50 cal gun, machine, HB, flexible.....	4	.....
11	2.36" launcher, rocket.....	3	.....
12	Car, armored, utility, M20, w/o armament.....	3	.....
13	Car, half-track, M3A2, wo/Armt.....	3	.....
14	Trailer, ¼-ton.....	4	.....
15	Trailer, 1-ton.....	2	.....
16	Trailer, K-52 (Sig).....	1	.....
17	Truck, ¼-ton.....	6	.....
18	Truck, ¾-ton, weapons carrier.....	3	.....
19	Truck, 1½-ton, cargo.....	1	.....
20	Truck, 2½-ton, cargo.....	2	.....
21	TOTAL MOTOR VEHICLES.....	18	.....

¹Cav Mecz Gp consists of a Hq & Hq Tr Cav Gp and 2 or more Cav Rcn Sq Mecz.

²See Par 138.

³Includes Atchd Med and Ch.

■ 138. ORGANIZATION—CAVALRY RECONNAISSANCE SQUADRON, MECHANIZED, T/O & E 2-25 (15 Sep 43, C1, 2) : ¹

1	2	3	4	5	6	7	8
<i>Item</i>	<i>Hq & Ss Tr T/O & E 2-26 (15 Sep 43, C1, 2, 3)</i>	<i>3 Rcn Tr (ea) T/O & E 2-27 (15 Sep 43, C1, 2, 3)</i>	<i>L Tk Co T/O & E 17-17 (11 Nov 44)</i>	<i>Aslt Gun Tr T/O & E 2-28 (15 Sep 43, C1, 2, 3)</i>	<i>Total</i>	<i>Atchd Med</i>	<i>Aggregate</i>
2 Officers.....	12	5	5	4	36	2	38
3 Warrant officers.....	3				3		3
4 Enlisted men.....	118	134	89	81	690	12	702
5 AGGREGATE.....	133	139	94	85	729	14	743
6 .30 cal carbine.....	100	85	24	55	434		434
7 .30 cal MG, L, Flex.....	8	13		4	51		51
8 .30 cal rifle, M1.....		26		12	90		90
9 .45 cal gun, submachine.....	30	28	70	18	202		202
10 .45 cal pistol, automatic.....	3				3		3
11 .50 cal MG, HB, Flex.....	6	3	2	5	22		22
12 2.36" launcher, rocket.....	8	4	2	9	31		31
13 60-mm mortar.....		9			27		27
14 Car, Armd, L M8, w/Armt.....	4	12			40		40
15 Carr, Mtz, 75-mm How.....				6	6		6
16 Carr, half-track, w/o Armt.....	5	4	1	8	26		26
17 Tank, light ²			17		17		17
18 Trailer, 1-ton.....	12	5	1	1	29		29
19 Trailer, ammunition, M10.....	2			9	11		11
20 Truck, 1/4-ton.....	10	23	2	2	83	4	87
21 Truck, 3/4-ton, ambulance.....						1	1
22 Truck, 3/4-ton, Wpns Carr.....						1	1
23 Truck, 2 1/2-ton, cargo.....	13	1	1	1	18		18
24 Truck, heavy, wrecker.....	1				1		1
25 Vehicle, Tk recovery, light, w/Armt.....	1		1	1	3		3
26 TOTAL MOTOR VEH.....	34	40	22	18	194	6	200

¹Not applicable to Cav Sq Mecz in Armd Div.

²Tank, Light M24 replaces Tank, Light M5.

SUMMARY OF ARMAMENT, INCLUDING WEAPONS MOUNTED ON VEHICLES (FOR ENTIRE SQUADRON)

1	2	3	4
<i>Weapon</i>	<i>Non-Vehicle</i>	<i>Organic to Vehicles</i>	<i>Total</i>
2 .30 cal carbine.....	434		434
3 .30 cal gun, machine, light.....	51	77	128
4 .30 cal rifle, M1.....	90		90
5 .45 cal pistol, automatic.....	3		3
6 .45 cal gun, submachine.....	202		202
7 .50 cal gun, machine, HB, flexible.....	22	26	48
8 37-mm gun.....		40	40
9 2.36" launcher, rocket.....	31		31
10 60-mm mortar.....	27		27
11 75-mm howitzer.....		6	6
12 75-mm gun.....		17	17
13 81-mm mortar.....		3	3

COAST ARTILLERY UNITS

■ 139. ORGANIZATION—COAST ARTILLERY GROUP, 155-MM GUNS:¹

1	2	3
	<i>Hq & Hq Btry CA Gp, 155-mm gun T/O & E 4-152 (31 Jul 44)²</i>	<i>CA Bns</i>
	<i>Item</i>	
2	Officers.....	16
3	Enlisted men.....	57
4	AGGREGATE.....	73
5	.30 cal carbine.....	24
6	.30 cal rifle, M1.....	22
7	.30 cal rifle, automatic.....	7
8	.45 cal pistol, automatic.....	5
9	.45 cal submachine gun.....	9
10	2.36" launcher, rocket.....	5
11	Trailer, ¼-ton.....	6
12	Truck, ¼-ton.....	6
13	Truck, ¾-ton, weapons carrier.....	4
14	TOTAL MOTOR VEHICLES.....	10

¹CA Gp may be composed of Hq & Hq Btry CA Gp 155-mm guns, and from 2 to 5 CA Bns, 155-mm Guns. See Par 140.

²Includes Atchd Med and Ch.

■ 140. ORGANIZATION—COAST ARTILLERY BATTALION, 155-MM GUN, T/O & E 4-155 (5 Aug 44) :

1	2	3	4	5
<i>Item</i>	<i>Hq & Hq Btry T/O & E 4-156 (5 Aug 44)</i>	<i>2 Btrys¹ (ea) T/O & E 4-157 (5 Aug 44)</i>	<i>Atchd Med T/O & E 4-155 (5 Aug 44)</i>	<i>Total</i>
2 Officers.....	11	7	1	26
3 Warrant officers.....	1			1
4 Enlisted men.....	140	169	9	487
5 AGGREGATE.....	152	176	10	514
6 Searchlight unit.....	8			8
7 Trailer, tilting type, 4-ton.....	4			4
8 .30 cal carbine.....	35	24		83
9 .30 cal rifle, M1.....	82	128		338
10 .30 cal rifle, automatic.....	19	15		49
11 .45 cal pistol, automatic.....	3			3
12 .45 cal gun, submachine.....	13	9		31
13 .50 cal gun, machine, AA.....	8	4		16
14 .50 cal gun, machine, HB, flexible.....	2	3		8
15 2.36" launcher, rocket.....	6	8		22
16 155-mm gun.....		4		8
17 Tractor, high-speed, 18-ton.....		2		4
18 Trailer, ¼-ton.....			1	1
19 Trailer, 1-ton.....	5	3		11
20 Truck, ¼-ton.....	1	1		3
21 Truck, ¾-ton, command.....	1	1		3
22 Truck, ¾-ton, weapons carrier.....	2	2	1	7
23 Truck, 2½-ton, cargo.....	5	3		11
24 Truck, 2½-ton, SWB.....	4			4
25 TOTAL MOTOR VEHICLES.....	13	9	1	32

¹ Two firing units per Btry.

FIELD ARTILLERY UNITS

■ 141. ORGANIZATION—FIELD ARTILLERY BRIGADE:¹

1	1	2	3
	Item	Hq & Hq Btry, Mtr, FA brig T/O & E 6-20-1 (10 Jan 44, C1)	FA Units
2	Officers.....	13	
3	Warrant Officers.....	1	
4	Enlisted men.....	89	
5	AGGREGATE.....	103	
6	.30 caliber, carbine.....	78	
7	.45 caliber, pistol, automatic.....	25	
8	.50 caliber, gun, machine, HB, flexible.....	3	
9	2.36" launcher, rocket.....	6	
10	Airplane, liaison.....	2	
11	Trailer, ¼-ton.....	1	
12	Trailer, 1-ton.....	2	
13	Truck, ¼-ton.....	3	
14	Truck, ¾-ton, command.....	4	
15	Truck, ¾-ton, weapons carrier.....	6	
16	Truck, 2½-ton, cargo.....	2	
17	Truck, 2½-ton, cargo, SWB.....	4	
18	TOTAL MOTOR VEHICLES.....	16	

¹ A FA Brig is composed of a Hq & Hq Btry, FA Brig, and such FA units as may be Atchd.

■ 142. ORGANIZATION—FIELD ARTILLERY GROUP:^{1 2}

	1	2	3
1	Item	Hq & Hq Btry FA Gp T/O & E 6-12 (20 Oct 44) ³	FA Bns (¹) (²)
2	Officers.....	18	.....
3	Enlisted men.....	81	.....
4	AGGREGATE.....	99	.....
5	.30 caliber, carbine.....	67	.....
6	.45 caliber, pistol, automatic.....	29	.....
7	.50 caliber, gun, machine, HB, flexible.....	2	.....
8	2.36" launcher, rocket.....	5	.....
9	Airplane, liaison.....	2	.....
10	Trailer, 1/4-ton.....	5	.....
11	Trailer, 1-ton.....	4	.....
12	Truck, 1/4-ton.....	6	.....
13	Truck, 3/4-ton, weapons carrier.....	8	.....
14	Truck, 2 1/2-ton, cargo.....	2	.....
15	Truck, 2 1/2-ton, cargo, SWB.....	3	.....
16	TOTAL MOTOR VEHICLES.....	19	.....

¹ A FA Gp consists of a Hq & Hq Btry, FA Gp and such FA units as may be assigned.² When a FA Bn is reinforced by the attachment of one or more additional FA Bns it is known as a FA Bn group. Such a group is commanded by the commander of the reinforced battalion.³ Includes Atchd Med and Ch.

■ 143. FIELD ARTILLERY OBSERVATION BATTALION, T/O & E 6-75, 20 Feb 45.

	1	2	3	4	5	6
1	Item	Bn Hq & Hq Btry T/O & E 6-76 (20 Feb 45)	2 Btrys (ea) T/O & E 6-77 (20 Feb 45)	Total	Atchd Med	Aggregate
2	Officers.....	11	7	25	1	26
3	Warrant Officers.....	2		2		2
4	Enlisted Men.....	127	143	413	8	421
5	AGGREGATE.....	140	150	440	9	449
6	Carbine, cal .30.....	109	132	373		373
7	Gun, machine, HB, cal .50, flexible.....	4	4	12		12
8	Gun, submachine, cal .45.....		2	4		4
9	Pistol, automatic, cal .45.....	31	18	67		67
10	Trailer, 1/4-ton.....	1	1	3	1	4
11	Trailer, 1-ton.....	7	7	21		21
12	Truck, 1/4-ton.....	6	8	22	1	23
13	Truck, 3/4-ton, weapons carrier.....	12	13	38	1	39
14	Truck, 2 1/2-ton, cargo.....	6	6	18		18
15	Truck, 2 1/2-ton, cargo, SWB.....	3	4	11		11
16	TOTAL MOTOR VEHICLES.....	27	31	89	2	91

■ 144. FIELD ARTILLERY BATTALION, 75-mm HOWITZER, PACK MOUNTAIN, T/O & E 6-185 (4 Nov 44, C1) :

	1	2	3	4	5	6
1	Unit	Hq & Hq & So Btry T/O & E 6-186	3 Btrys 75-mm Pk How (ea) T/O & E 6-187	Total	Atchd Med	Aggregate
2	Officers.....	14	4	26	2	28
3	Warrant Officers.....	2		2		2
4	Enlisted men.....	121	131	514	18	532
5	AGGREGATE.....	137	135	542	20	562
6	.30 caliber, carbine.....	132	131	525	6	531
7	.30 caliber, automatic, rifle.....	3	4	15		15
8	.45 caliber, pistol, automatic.....	2		2	1	3
9	.45 cal, gun, submachine.....		1	3		3
10	.50 cal, gun, machine, HB, flexible.....	3	2	9		9
11	75-mm, howitzer, pack.....		4	12		12
12	Airplane, liaison.....	2		2		2
13	Trailer, ¼-ton.....	1		1		1
14	Truck, ¼-ton.....	4		4		4
15	Truck, ¾-ton, Weapons carrier.....	1		1		1
16	Animals, including:	155	82	401	9	410
17	Horse, riding, (bell mare).....	(1)		(1)		(1)
18	Mule, pack.....	(127)	(70)	(337)	(7)	(344)
19	Horse, riding.....	(27)	(12)	(63)	(2)	(65)
20	TOTAL MOTOR VEHICLES.....	5		5		5

■ 145. ORGANIZATION—FIELD ARTILLERY BATTALION, MOTORIZED, 105-MM HOWITZER, TRACTOR-DRAWN, T/O & E 6-325 (20 Oct 44 C1) : ¹

	1	2	3	4	5	6	7
1	Item	Hq & Hq Btry T/O & E 6-26 (27 Sept 44)	S 105-mm How Btrys (ea) T/O & E 6-327 (20 Oct 44)	Sv Btry T/O & E 6-329 (20 Oct 44)	Total	Atchd Med	Aggregate
2	Officers.....	12	4	4	28	1	29
3	Warrant officers.....	1		1	2		2
4	Enlisted men.....	95	94	71	448	11	459
5	AGGREGATE.....	108	98	76	478	12	490
6	.30 cal carbine.....	83	88	64	411		411
7	.45 cal pistol, automatic.....	25	10	12	67		67
8	.45 cal gun, submachine.....		1		3		3
9	.50 cal gun, machine, HB, flexible.....	5	4	4	21		21
10	2.36" launcher, rocket.....	6	8	10	40		40
11	105-mm howitzer.....		4		12		12
12	Airplane, liaison.....	2			2		2
13	Tractor, high speed, 13-ton.....		6		18		18
14	Trailer, ¼-ton.....	2	3	1	12	1	13
15	Trailer, ammunition, M10.....		2	9	15		15
16	Trailer, 1-ton.....	2	2	3	11		11
17	Truck, ¼-ton.....	6	3	2	17	1	18
18	Truck, ¾-ton, weapons carrier.....	11	4	3	26	1	27
19	Truck, 2½-ton, cargo.....	2	2	8	16		16
20	Truck, 2½-ton, cargo, SWB.....	1		5	6		6
21	TOTAL MOTOR VEHICLES.....	20	15	18	83	2	85

¹ Table is for FA Bn, 105-mm How, Tr-Dr, with non-divisional artillery.

■ 146. FIELD ARTILLERY BATTALION, MOTORIZED, 105-mm HOWITZER, TRUCK-DRAWN, T/O & E 6-25 (27 Sep 44) : ¹

	1	2	3	4	5	6	7
1	Unit	Hq & Hq Btry, T/O & E 6-26 (27 Sept 44)	3 How Btrys (ca) T/O & E 6-27 (27 Sept 44, C1)	Sv Btry, T/O & E 6-29 (27 Sept 44, C1)	Total	Atchd Med	Aggregate
2	Officers.....	12	4	4	28	1	29
3	Warrant officers.....	1		1	2		2
4	Enlisted men.....	95	92	69	440	11	451
5	AGGREGATE.....	108	96	74	470	12	482
6	.30 cal carbine.....	83	87	62	406		406
7	.45 cal pistol, automatic.....	25	9	12	64		64
8	.45 cal gun, submachine, M3.....		1		3		3
9	.50 cal gun, machine, HB, flexible..	5	4	4	21		21
10	2.36" launcher, rocket.....	6	8	10	40		40
11	105-mm howitzer.....		4		12		12
12	Airplane, liaison.....	2			2		2
13	Trailer, ¼-ton.....	2	3	1	12	1	13
14	Trailer, 1-ton.....	2	1	3	8		8
15	Trailer, ammunition, M10.....		2	9	15		15
16	Truck, ¼-ton.....	6	3	2	17	1	18
17	Truck, ¾-ton, weapon carrier.....	11	4	3	26	1	27
18	Truck, 2½-ton, cargo.....	2	1	8	13		13
19	Truck, 2½-ton, cargo, SWB.....	1	6	5	24		24
20	TOTAL MOTOR VEHICLES.....	20	14	18	80	2	82

¹ Table is for FA Bn, 105-mm How, Trk-Dr with non-divisional artillery. For FA Bn, 105-mm How, Trk-Dr with Inf Div Arty see Par 118-121, incl.

■ 147. ARMORED FIELD ARTILLERY BATTALION, T/O & E 6-165, (22 Nov 44) :¹

	1	2	3	4	5	6	7
		<i>Hq & Hq Btry T/O & E 6-166 (22 Nov 44, C1)</i>	<i>3 Btrys (ea) T/O & E 6-167 (22 Nov 44, C1)</i>	<i>Sv Btry T/O & E 6-169 (22 Nov 44, C1)</i>	<i>Total</i>	<i>Atchd Med</i>	<i>Aggre- gate</i>
1	Officers.....	14	4	5	31	1	32
2	Warrant Officers.....			2	2		2
3	Enlisted.....	92	101	82	477	9	486
4	AGGREGATE.....	106	105	89	510	10	520
5	.30 cal, carbine.....	68	88	59	391		391
6	.30 cal gun, machine, light, flexible.....	4	4	4	20		20
7	.45 cal pistol, automatic.....	5			5		5
8	.45 cal gun, submachine.....	33	17	30	114		114
9	.50 cal gun, machine, HB, flexible.....	6	4	6	24		24
10	2.36-in launcher, rocket.....	11	7	8	40		40
11	Airplane, liaison.....	2			2		2
12	Car, half-track, w/o Arm.....	9	7		30		30
13	Carriage motor, 105-mm How.....		6		18		18
14	Tank, medium, w/o Arm.....	3			3		3
15	Trailer, ammunition, M-10.....		8	9	33		33
16	Trailer, ¼-ton.....	1			1		1
17	Trailer, 1-ton.....	2	2	12	20		20
18	Truck, ¼-ton.....	8	3	3	20	1	21
19	Truck, ¾-ton ambulance KD.....					1	1
20	Truck, ¾-ton weapons carrier.....	3		3	6	1	7
21	Truck, 2½-ton, cargo.....	1	1	21	25		25
22	Truck, wrecking, heavy.....			1	1		1
23	Vehicle, tank, recovery M-32.....			2	2		2
24	TOTAL MOTOR VEHICLES.....	24	17	9	105	3	108

¹ Table for Armd FA Bn 105-mm How, SP when not part of Armd Div Arty.

■ 148. FIELD ARTILLERY BATTALION, MOTORIZED, 4.5 INCH ROCKET TRUCK-DRAWN, T/O & E 6-85, (10 Apr 45) :

	1	2	3	4	5	6	7
1		<i>Hq & Hq Btry T/O & E 6-86</i>	<i>3 Btrys 4.5 in Rocket T/O & E 6-87 (ea)</i>	<i>Sv Btry T/O & E 6-89</i>	<i>Total</i>	<i>Atchd Med</i>	<i>Aggre- gate</i>
2	Officers.....	11	6	4	33	1	34
3	Warrant Officers.....			2	2		2
4	Enlisted Men.....	94	138	121	629	16	645
5	AGGREGATE.....	105	144	127	664	17	681
6	.30 cal carbine.....	102	144	127	661		661
7	.45 cal Pistol, automatic.....	3			3		3
8	4.5-in launcher, rocket.....		12		36		36
9	.45 cal gun, submachine.....		1		3		3
10	2.36-in launcher, rocket.....	7	9	10	44		44
11	Tractor, Diesel engine.....	1			1		1
12	Trailer, ¼-ton.....	1	4	1	14	1	15
13	Trailer, 1-ton.....	3	4	27	42		42
14	Trailer, low bed, 8-ton.....	1			1		1
15	Truck, ¼-ton.....	8	6	2	28	1	29
16	Truck, ¾-ton, weapons carrier.....	10	7	3	34	1	35
17	Truck, 1½-ton, cargo.....		13		39		39
18	Truck, 2½-ton, cargo.....	3	3	23	35		35
19	Truck, 2½-ton, cargo, SWB.....	1		5	6		6
20	Truck, 4-ton, cargo.....	1			1		1
21	TOTAL MOTOR VEHICLES.....	22	29	33	143	2	145

■ 149. ORGANIZATION—FIELD ARTILLERY BATTALION, MOTORIZED, 155-mm HOWITZER OR 4.5" GUN TRACTOR-DRAWN, T/O & E 6-335 (27 Sep 44) :

	1	2	3	4	5	6	7
1	Item	Hq & Hq Btry T/O & E 6-36 (27 Sept 44, C1)	3 How Btrys (ea) T/O & E 6-337 (27 Sept 44, C1)	Sv Btry T/O & E 6-339 (27 Sept 44, C1)	Total	Atchd Med	Aggregate
2	Officers.....	12	4	4	28	1	29
3	Warrant officers.....	1		1	2		2
4	Enlisted men.....	96	102	71	473	11	484
5	AGGREGATE.....	109	106	76	503	12	515
6	.30 cal carbine.....	84	96	63	435		435
7	.45 cal pistol, automatic.....	25	10	13	68		68
8	.45 cal gun, submachine, M3.....		1		3		3
9	.50 cal gun, machine, HB, flexible.....	5	4	4	21		21
10	2.36" launcher, rocket.....	6	8	10	40		40
11	Howitzer or gun ¹		4		12		12
12	Airplane, liaison.....	2			2		2
13	Tractor, medium, M5.....		6		18		18
14	Trailer, ¼-ton.....	2	3	1	12	1	13
15	Trailer, ammunition, M10.....		1	9	12		12
16	Trailer, 1-ton.....	2	1	3	8		8
17	Trailer, 4-ton, ammunition.....		2		6		6
18	Truck, ¼-ton.....	6	3	2	17	1	18
19	Truck, ¾-ton, weapons carrier.....	11	4	3	26	1	27
20	Truck, 2½-ton, cargo.....	2	2	8	16		16
21	Truck, 2½-ton, cargo, SWB.....	1		5	6		6
22	Truck, 4-ton, wrecker.....			1	1		1
23	TOTAL MOTOR VEHICLES.....	20	15	19	84	2	86

¹ This table for non-divisional artillery. For details of FA Bn, Mtz, 155-mm How or 4.5" Gun, tractor-drawn, T/O & E 6-335 see Pars 119-122, incl.

² 155-mm How or 4.5" Gun.

■ 150. ORGANIZATION—FIELD ARTILLERY BATTALION, MOTORIZED, 155-mm GUN, TRACTOR-DRAWN, T/O & E 6-355 (6 Feb 45) :

	1	2	3	4	5	6	7
1	Item	Hq & Hq Btry T/O & E 6-56 (20 Oct 44)	3 155-mm Gun Btrys (ea) T/O & E 6-357 (6 Feb 45)	Serv Btry T/O & E 6-359 (6 Feb 45)	Total	Atchd Med	Aggregate
2	Officers.....	11	4	2	25	1	26
3	Warrant officers.....	1		1	2		2
4	Enlisted men.....	93	126	31	502	11	513
5	AGGREGATE.....	105	130	34	529	12	541
6	.30 cal carbine.....	82	120	26	468		468
7	.45 cal pistol, automatic.....	23	10	8	61		61
8	.45 cal gun, submachine.....		1		3		3
9	.50 cal gun, machine, HB, flexible.....	5	4	2	19		19
10	2.36" launcher, rocket.....	5	8	4	34		34
11	155-mm gun.....		4		12		12
12	Airplane, liaison.....	2			2		2
13	Tractor, high speed, 18-ton.....		6		18		18
14	Trailer, ammunition, M10.....		1		3		3
15	Trailer, ¼-ton.....	2	3	1	12	1	13
16	Trailer, 1-ton.....	2	1	3	8		8
17	Trailer, 8-ton, ammunition.....		2		6		6
18	Truck, ¼-ton.....	5	2	1	12	1	13
19	Truck, ¾-ton, weapons carrier.....	11	6	2	31	1	32
20	Truck, 2½-ton, cargo.....	2	3	2	13		13
21	Truck, 2½-ton, cargo, SWB.....	1		2	3		3
22	Truck, heavy wrecker.....			1	1		1
23	TOTAL MOTOR VEHICLES.....	19	17	8	78	2	80

■ 151. ORGANIZATION—FIELD ARTILLERY BATTALION, MOTORIZED, 155-mm GUN, TRUCK-DRAWN, T/O & E 6-55 (20 Oct 44) :

	1	2	3	4	5	6	7
1	Item	Hq & Hq Btry T/O & E 6-56 (20 Oct 44)	S 155- mm Gun Btrys (ea) T/O & E 6-57 (20 Oct 44)	S Btry T/O & E 6-59 (2 Jul 43, C1, 2, 3)	Total	Atchd Med	Aggre- gate
2	Officers.....	11	4	2	25	1	26
3	Warrant officers.....	1		1	2		2
4	Enlisted men.....	93	124	29	494	11	505
5	AGGREGATE.....	105	128	32	521	12	533
6	.30 cal carbine.....	82	118	24	460		460
7	.45 cal pistol, automatic.....	23	10	8	61		61
8	.45 cal gun, submachine.....		1		3		3
9	.50 cal gun, machine, HB, flexible.....	5	4	2	19		19
10	2.36" launcher, rocket.....	6	8	4	34		34
11	155-mm gun.....		4		12		12
12	Airplane, liaison.....	2			2		2
13	Trailer, 1/4-ton.....	2	3	1	12	1	13
14	Trailer, ammunition, M10.....		1		3		3
15	Trailer, 1-ton.....	2	1	3	8		8
16	Trailer, 8-ton, ammunition.....		2		6		6
17	Truck, 1/4-ton.....	5	2	1	12	1	13
18	Truck, 3/4-ton, weapons carrier.....	11	6	2	31	1	32
19	Truck, 2 1/2-ton, cargo.....	2	2	2	10		10
20	Truck, 2 1/2-ton, cargo, SWB.....	1		2	3		3
21	Truck, heavy wrecker.....			1	1		1
22	Truck, 7 1/2-ton, prime mover.....		6		18		18
23	TOTAL MOTOR VEHICLES.....	19	16	8	75	2	77

■ 152. ORGANIZATION—FIELD ARTILLERY BATTALION, MOTORIZED, 155-mm GUN, SELF-PROPELLED, T/O & E 6-125 (29 Sep 43, C1, 2, 3) :

1	Item	2 <i>Hq & Hq Btry T/O & E 6-56 (20 Oct 44)</i>	3 <i>3 155-mm Gun Btrys (ea) T/O & E 6-127 (29 Sept 43, C1, 2, 3)</i>	4 <i>Sv Btry T/O & E 6-129 (29 Sept 43, C1, 2, 3)</i>	5 <i>Total</i>	6 <i>Atchd Med</i>	7 <i>Aggregate</i>
2	Officers.....	11	4	2	25	1	26
3	Warrant officers.....	1	1	1	2		2
4	Enlisted men.....	93	108	32	449	11	460
5	AGGREGATE.....	105	112	35	476	12	488
6	.30 cal carbine.....	82	102	27	415		415
7	.45 cal pistol, automatic.....	23	10	8	61		61
8	.50 cal gun, machine, HB, flexible.....	5	4	2	19		19
9	2.36" launcher, rocket.....	6	8	4	34		34
10	Airplane, liaison.....	2			2		2
11	Carriage, motor, 155-mm gun.....		4		12		12
12	Carrier, cargo.....		4		12		12
13	Trailer, ammunition, M10.....		2		6		6
14	Trailer, ¼-ton.....	2	1	1	6	1	7
15	Trailer, 1-ton.....	2	2	3	11		11
16	Truck, ¼-ton.....	5	2	1	12	1	13
17	Truck, ¾-ton, weapons carrier.....	11	6	2	31	1	32
18	Truck, 2½-ton, cargo.....	2	4	2	16		16
19	Truck, 2½-ton, cargo, SWB.....	1		2	3		3
20	Truck, heavy wrecker, M1.....			1	1		1
21	TOTAL MOTOR VEHICLES.....	19	20	8	87	2	89

■ 153. ORGANIZATION—FIELD ARTILLERY BATTALION, MOTORIZED, 8-INCH HOWITZER, TRACTOR-DRAWN, T/O & E 6-365 (2 Jul 43, C1, 2, 3, 4, 5) :

	1	2	3	4	5	6	7
1	Item	Hq & Hq Btry T/O & E 6-56 (20 Oct 44).	3 8 in. How Btrys (ea) T/O & E 6-367 (2 Jul 43, C1, 2, 3, 4)	Sv Btry T/O & E 6-359 (6 Feb 45)	Total	Atchd Med	Aggre- gate
2	Officers.....	11	4	2	25	1	26
3	Warrant officers.....	1		1	2		2
4	Enlisted men.....	93	135	31	529	11	540
5	AGGREGATE.....	105	139	34	556	12	568
6	.30 cal carbine.....	82	129	26	495		495
7	.45 cal pistol.....	23	9	8	58		58
8	.50 cal gun, machine, HB, flexible.....	5	4	2	19		19
9	2.36" launcher, rocket.....	6	8	4	34		34
10	8" howitzer.....		4		12		12
11	Airplane, liaison.....	2			2		2
12	Tractor, medium, M4.....		6		18		18
13	Trailer, ammunition, M10.....		1		3		3
14	Trailer, ¼-ton.....	2	2	1	9	1	10
15	Trailer, 1-ton.....	2	1	3	8		8
16	Trailer, 8-ton, ammunition.....		2		6		6
17	Truck, ¼-ton.....	5	2	1	12	1	13
18	Truck, ¾-ton, weapons carrier.....	11	6	2	31	1	32
19	Truck, 2½-ton, cargo.....	2	2	2	10		10
20	Truck, 2½-ton, cargo, w/w.....	1		2	3		3
21	Truck, heavy wrecker, M1.....			1	1		1
22	TOTAL MOTOR VEHICLES.....	19	16	8	75	2	77

■ 154. ORGANIZATION—FIELD ARTILLERY BATTALION, MOTORIZED, 8-INCH HOWITZER, TRUCK-DRAWN, T/O & E 6-65 (20 Oct 44):

1	2	3	4	5	6	7
<i>Item</i>	<i>Hq & Hq Btry T/O & E 6-66 (20 Oct 44)</i>	<i>3 8 in. How Btrys (ea) T/O & E 6-67 (20 Oct 44)</i>	<i>Serv Btry T/O & E 6-69 (2 Jul 43, Cl, 2, 3)</i>	<i>Total</i>	<i>Atchd Med</i>	<i>Aggregate</i>
2 Officers.....	11	4	2	25	1	26
3 Warrant officers.....	1		1	2		2
4 Enlisted men.....	93	133	29	521	11	532
5 AGGREGATE.....	105	137	32	548	12	560
6 .30 cal carbine.....	82	127	24	487		487
7 .45 cal pistol, automatic.....	23	10	8	61		61
8 .45 cal gun, submachine.....		1		3		3
9 .50 cal gun, machine, HB, flexible.....	5	4	2	19		19
10 2.36" launcher, rocket.....	6	8	4	34		34
11 8" howitzer.....		4		12		12
12 Airplanes, liaison.....	2			2		2
13 Trailer, ammunition, M10.....		1		3		3
14 Trailer, ¼-ton.....	2	3	1	12	1	13
15 Trailer, 1-ton.....	2	1	3	8		8
16 Trailer, 8-ton, ammunition.....		2		6		6
17 Truck, ¼-ton.....	5	2	1	12	1	13
18 Truck, ¾-ton, weapons carrier.....	11	6	2	31	1	32
19 Truck, 2½-ton, cargo.....	2	2	2	10		10
20 Truck, 7½-ton, prime mover.....		6		18		18
21 Truck, heavy wrecker, M1.....			1	1		1
22 TOTAL MOTOR VEHICLES.....	18	16	6	72	2	74

■ 155. FIELD ARTILLERY BATTALION, MOTORIZED, 240-mm HOWITZER, M1918, OR 8-INCH GUN, TRACTOR DRAWN, T/O & E 6-395 (18 Aug 43, C1, 2, 3, 4):

	1	2	3	5	5	6	7
1	Unit	Hq & Hq Btry T/O & E 6-56 (20 Oct 44)	3 Btrys (ca) T/O & E 6-597 (18 Aug 43, C1, 2, 3, 4)	Sv Btry T/O & E 6-359 (6 Feb 45)	Total	Atchd Med	Aggregate
2	Officers.....	11	4	2	25	1	26
3	Warrant officers.....	1		1	2		2
4	Enlisted men.....	93	108	31	448	11	459
5	AGGREGATE.....	105	112	34	475	12	487
6	.30 cal carbine.....	82	102	26	414		414
7	.45 cal pistol, automatic.....	23	10	8	61		61
8	.50 cal gun, machine, HB, flexible.....	5	4	2	19		19
9	2.36" launcher, rocket.....	6	6	4	28		28
10	240-mm howitzer, modified, (8" gun).....		2		6		6
11	Airplane, liaison.....	2			2		2
12	Crane, truck-mounted.....		1		3		3
13	Tractor, heavy.....		6		18		18
14	Trailer, 1/4-ton.....	2	2	1	9	1	10
15	Trailer, 1-ton.....	2	1	3	8		8
16	Trailer, ammunition, M10.....		1		3		3
17	Trailer, 8-ton, ammunition.....		4		12		12
18	Trailer, clamshell.....		1		3		3
19	Truck, 1/4-ton.....	5	2	1	12	1	13
20	Truck, 3/4-ton, weapon carrier.....	11	6	2	31	1	32
21	Truck, 2 1/2-ton, cargo.....	2	2	2	10		10
22	Truck, 2 1/2-ton, cargo, SWB.....	1		2	3		3
23	Truck, heavy wrecker.....			1	1		1
24	TOTAL MOTOR VEHICLES.....	19	17	8	78	2	80

TANK DESTROYER UNITS

■ 156. ORGANIZATION—TANK DESTROYER GROUP: ¹

	1	2	3
1	Item	Hq & Hq Co TD Gp T/O & E 18-10-1 (31 Oct 44) (²)	TD Bns
2	Officers.....	15	
3	Enlisted men.....	61	
4	AGGREGATE.....	76	
5	.30 cal carbine.....	49	
6	30 cal gun, machine, flexible.....	2	
7	.45 cal pistol, automatic.....	24	
8	.50 cal gun, machine, HB, flexible, M-2.....	4	
9	2.36" launcher, rocket.....	5	
10	Car, armored, utility, M20 wo/armament.....	2	
11	Trailer, ¼-ton.....	3	
12	Trailer, 1-ton.....	3	
13	Truck, ¼-ton.....	6	
14	Truck, ¾-ton, weapons carrier.....	2	
15	Truck, 1½-ton, cargo.....	1	
16	Car, half-track, M3A2, wo/armament ³	3	
17	Truck, 2½-ton, cargo.....	1	
18	TOTAL MOTOR VEHICLES.....	15	

¹TD Gp consists of Hq & Hq Co TD Gp and normally 2 or more Bns.

²Includes Atchd 1 Ch and 1 Med O.

³1 armd w/.50 cal MG; 1 w/.30 MG, and 1 unarmed.

■ 157. ORGANIZATION—TANK DESTROYER BATTALION, (SELF-PROPELLED)
T/O & E 18-25 (15 Mar 44, C1, 2, 3, 4) :

1	2	3	4	5	6	7
Item	Hq & Hq Co T/O & E 18-26 (15 Mar 44, C1, 2, 3)	Rcn Co T/O & E 18-28 (15 Mar 44, C1, 2, 3, 4)	3 TD Cos (ea) T/O & E 18-27 (15 Mar 44, C1, 2, 3, 4)	Total	Atchd Med	Aggregate
2 Officers	13	6	5	34	1	35
3 Warrant Officers	2			2		2
4 Enlisted men	105	115	124	592	15	607
5 AGGREGATE	120	121	129	628	16	644
6 .30 cal carbine	28	64	67	293		293
7 .30 cal gun, machine, flexible	3	12	4	27		27
8 .30 cal rifle, M1	63	46	49	256		256
9 .45 cal pistol, automatic	29	11	13	79		79
10 .50 cal gun, machine, HB, flexible M2	7	7	9	41		41
11 2.36" launcher, rocket	14	21	9	62		62
12 Carriage, motor, 76-mm gun, M18, w/Armt ¹			12	36		36
13 Car, armored, light, M8, w/Armt		6		6		6
14 Car, armored, utility, M20, w/Armt	3		8	30		30
15 Compressor, air, Mtz, 105 CFM		1		1		1
16 Trailer, ¼-ton	1	2	1	6		6
17 Trailer, 1-ton, cargo	12			12	1	13
18 Trailer, Am, M10	6		3	15		15
19 Truck, ¼-ton	8	18	6	44	4	48
20 Truck, ¾-ton, Amb KD					1	1
21 Truck, ¾-ton, weapons carrier	6	1		7		7
22 Truck, 1½-ton, 6x6, cargo	1	4		5	1	6
23 Truck, 2½-ton, cargo	18		1	21		21
24 Truck, 10-ton, heavy wrecker, M1A1	1			1		1
25 Vehicle, tank recovery, w/Armt, M32			1	3		3
26 TOTAL MOTOR VEHICLES	37	33	28	154	6	160

SUMMARY OF ARMAMENT, INCLUDING WEAPONS MOUNTED ON VEHICLES, AND TRAIN DEFENSE GUNS (FOR ENTIRE BN)

1	2	3	4
Weapon	Non-Vehicle	Organic to Vehicles	Total
2 .30 cal carbine	293		293
3 .30 cal gun, machine, light	27	9	36
4 .30 cal rifle, M1	256		256
5 .45 cal pistol, automatic	79		79
6 .50 cal gun, machine, HB, flexible	41	39	80
7 37-mm gun		6	6
8 2.36" launcher, rocket	62		62
9 76-mm gun ²		36	36
10 81-mm, Mortar, M1		3	3

¹ Models M36, M10, or M10A1 may be substituted.

² If Bn is equipped with carriage, motor, M36, substitute 90-mm gun.

■ 158. ORGANIZATION—TANK DESTROYER BATTALION, TOWED, T/O & E
18-35 (1 Sep 44, C1, 2) :

	1	2	3	4	5	6
1	Item	Hq & Hq Co T/O & E 18-36 (1 Sep 44, C1)	3 TD Cos (ea) T/O & E 18-37 (1 Sep 44, C1)	Total	Atchd Med	Aggregate
2	Officers.....	15	5	30	1	31
3	Warrant officers.....	2		2		2
4	Enlisted men.....	148	188	712	15	727
5	AGGREGATE.....	165	193	744	16	760
6	.30 cal carbine.....		120	360		360
7	.30 cal gun, machine, flexible.....	11	13	50		50
8	.30 cal rifle, M1.....	11	24	83		83
9	.45 cal gun, submachine.....	151	49	298		298
10	.45 cal pistol, automatic.....	3		3		3
11	.50 cal gun, machine, HB, flexible M2.....	8	9	35		35
12	2.36" launcher, rocket.....	26	15	71		71
13	3" gun, M1.....		12	36		36
14	Car, armored, light, M8, with armament.....	4		4		4
15	Car, armored, utility, M20, w/o Armt.....	4	2	10		10
16	Trailer, Am, M10.....	6	3	15		15
17	Trailer, 1/4-ton.....	1	1	4		4
18	Trailer, 1-ton, cargo.....	8		8	1	9
19	Truck, 1/4-ton.....	18	15	63	4	67
20	Truck, 3/4-ton, weapons carrier.....	6		6		6
21	Truck, 1 1/2-ton, (12 volt system).....	1	3	10	1	11
22	Truck, 2 1/2-ton, cargo.....	14	1	17		17
23	Truck, heavy wrecker.....	1		1		1
24	Vehicle, armored utility, M39.....		12	36		36
25	TOTAL MOTOR VEHICLES.....	48	33	147	5	152

SUMMARY OF ARMAMENT, INCLUDING WEAPONS MOUNTED ON VEHICLES,
AND TRAIN DEFENSE GUNS (FOR ENTIRE BN)

1	2	3	4
<i>Weapon</i>	<i>Non-Vehicle</i>	<i>Organic to Vehicles</i>	<i>Total</i>
2	30 cal carbine.....	360	360
3	.30 cal gun, machine, light.....	50	54
4	.30 cal rifle, M1.....	83	83
5	.45 cal gun, submachine.....	298	298
6	.45 cal pistol, automatic.....	3	3
7	.50 cal gun, machine, HB, flexible.....	35	53
8	37-mm gun.....	4	4
9	2.36" launcher, rocket.....	71	71
10	3" gun, AT, M6.....	36	36

■ 159. ADJUTANT GENERAL AND SPECIAL SERVICE UNITS: ¹

1	2	3	4
Unit	Personnel	Vehicles	Remarks
2 Army Postal Unit T/O 12-605 12-605 (8 Feb 44) (Type M)	O.....2 EM.....27 Agg.....29	Trk, 1/4-ton.....1 Trk, 3/4-ton, Wpn Carr.....1 Trk, 1 1/2-ton, cargo.....1 (²)	Furnishes postal Svs and maintains directory Sv for units. Serves units of 20,000 to 25,000 non-divisional Trs. Type units A thru K are organized to furnish the same Svs to fewer Trs. Wt (short tons): on wheels, 9, boxed, 10. Cubage (ship tons): on wheels, 46; boxed, 35.
3 Base Post Office T/O 12-601 (8 Feb 44) Type A to J, incl.	O.....15 EM.....434 Agg.....449 (Type J)	Trk, 1/4-ton.....2 Trk, 3/4-ton, Wpn Carr.....2 Trk, 2 1/2-ton, cargo.....2	Base Post Office T/O 12-601, Type A to J, inclusive, used for T of Opns composed of 25,000 to 400,000 Trs, incl. Wt (short tons): on wheels, 29; boxed, 32. Cubage (ship tons): on wheels, 164; boxed, 134.
4 Base Post Office T/O 12-601 (8 Feb 44) Type K	O.....19 EM.....551 Agg.....570	Trk, 1/4-ton.....2 Trk, 3/4-ton, Wpn Carr.....2 Trk, 2 1/2-ton, cargo.....3	Central post office for T of Opns composed of 400,000 to 500,000 Pers. Same Opns and functions as 12-601, A to J. Wt (short tons): on wheels, 37; boxed, 41. Cubage (ship tons): on wheels, 208; boxed, 165.
5 Base Post Office T/O 12-601 (8 Feb 44) Type M	O.....22 EM.....625 Agg.....647	Trk, 1/4-ton.....2 Trk, 3/4-ton, Wpn Carr.....2 Trk, 2 1/2-ton, cargo.....4	Central post office T of Opns composed of 500,000 to 600,000 Pers. Wt (short tons): on wheels, 43; boxed, 47. Cubage (ship tons): on wheels, 252; boxed, 196.
6 Base Post Office T/O 12-601 (8 Feb 44) Type N	O.....25 EM.....713 Agg.....738	Trk, 1/4-ton.....2 Trk, 3/4-ton, Wpn Carr.....3 Trk, 2 1/2-ton, cargo.....4	Central post office for T of Opns composed of 600,000 to 750,000 Pers. Wt (short tons): on wheels, 47; boxed, 52. Cubage (ship tons): on wheels, 270; boxed, 214.
7 Base Post Office T/O 12-601 (8 Feb 44) Type O	O.....31 EM.....824 Agg.....855	Trk, 1/4-ton.....2 Trk, 3/4-ton, Wpn Carr.....3 Trk, 2 1/2-ton, cargo.....5	Central post office for T of Opns composed of 750,000 to 1,000,000 Pers. Wt (short tons): on wheels, 53; boxed, 58. Cubage (ship tons): on wheels, 310; boxed, 241.
8 Machine Records Unit Fixed (Type E) T/O 12-317 (3 Oct 44)	O.....4 EM.....89 Agg.....93	Trk, 1/4-ton.....1 Trk, 3/4-ton.....1 Trk, 2 1/2-ton, 6x6, Generator AC.....1	Provides Pers and Equip to operate fixed machine records unit serving 200,000 to 250,000 Trs. Wt (short tons): on wheels, 7; boxed, 8. Cubage (ship tons): on wheels, 28; boxed, 28.

159. ADJUTANT GENERAL AND SPECIAL SERVICE UNITS ¹ (Continued) :

1	1 <i>Unit</i>	2 <i>Personnel</i>	3 <i>Vehicles</i>	4 <i>Remarks</i>
9	Machine Records Unit (Mbl) Type X T/O 12-317 (3 Oct 44)	O..... 2 EM.....29 Agg.....31	Tlr, 1-ton, Generator.....2 Semi-trailer, Van.....3 Trk, $\frac{1}{4}$ -ton.....1 Trk, $\frac{3}{4}$ -ton.....1 Trk, $2\frac{1}{2}$ -ton, 6x6.....1 Trk, 4-, 5-ton, Trac.....3	1 per divided corps or small task force of less than 35,000 strength.
10	Machine Records Unit (Mbl) Type Y T/O 12-317 (3 Oct 44)	O..... 3 EM.....45 Agg.....48	Tlr, 1-ton, Generator.....2 Semi-trailer, Van.....4 Trk, $\frac{1}{4}$ -ton.....1 Trk, $\frac{3}{4}$ -ton.....1 Trk, $2\frac{1}{2}$ -ton, 6x6.....2 Trk, 4-, 5-ton, Trac.....4	1 per type corps, Reinf corps, AF, or task force of 35,000 to 75,000 strength.
11	Machine Records Unit (Mbl) Type Z T/O 12-317 (3 Oct 44)	O..... 4 EM.....64 Agg.....68	Tlr, 1-ton, Generator.....3 Semi-trailer, Van.....5 Trk, $\frac{1}{4}$ -ton.....1 Trk, $\frac{3}{4}$ -ton, Comd.....1 Trk, $2\frac{1}{2}$ -ton.....3 Trk, 4-, 5-ton, Trac.....5	1 per Reinf corps, Army, AF or task force of 750,00 to 125,000 strength.
12	Postal Regulating Station T/O 12-602 (28 Sep 44)	O..... 3 EM.....28 Agg.....31	Trk, $\frac{1}{4}$ -ton.....1 Trk, $\frac{3}{4}$ -ton, Wpn Carr.....1 Trk, $1\frac{1}{2}$ -ton, cargo.....1	Usually established at Army R Stas between the CZ and Com Z. Wt (short tons): on wheels, 8; boxed, 9. Cubage (ship tons): on wheels, 45; boxed, 34.
13	Hq & Hq Co Replace- ment Depot T/O & E 12-42 (14 Oct 44)	O..... 30 WO..... 2 EM.....164 Agg.....196	Tlr, $\frac{1}{4}$ -ton.....3 Amb, $\frac{3}{4}$ -ton.....2 Trk, $\frac{1}{4}$ -ton.....5 Trk, $\frac{3}{4}$ -ton, Wpn Carr.....5 Trk, $2\frac{1}{2}$ -ton, cargo.....2	Provides overhead to operate replacement depot of 5 Replacement Bns (T/O 20-47) with gross capacity of 6,000 replacements. Wt (short tons): on wheels, 34; boxed, 37. Cubage (ship tons): on wheels, 219; boxed, 167.
14	Hq & Hq Det Replace- ment Bn T/O & E 12-46 (12 Oct 44)	O..... 8 EM.....23 Agg.....31	Tlr, $\frac{1}{4}$ -ton.....1 Trk, $\frac{1}{4}$ -ton.....2 Trk, $\frac{3}{4}$ -ton, Wpn Carr.....2 Trk, $2\frac{1}{2}$ -ton, cargo.....3	Provides overhead necessary to administer, train and supply 4 Repl Cos (T/O 20-47) of 300 Repls ea. Wt (short tons): on wheels, 22; boxed, 24. Cubage (ship tons): on wheels, 144; boxed, 101.
15	Replacement Co T/O & E 20-47 (31 Aug 43, C1)	O..... 4 EM.....31 Agg.....35	Trk, $1\frac{1}{2}$ -ton, cargo.....1	Co is organized into 3 Plats of 100 Repls each. Total for Co is 300 Repls.

159. ADJUTANT GENERAL AND SPECIAL SERVICE UNITS ¹ (Continued) :

1	2	3	4	
	Unit	Personnel	Vehicles	Remarks
16	Special Service Co T/O 28-17 (16 Mar 44)	O..... 5 EM.....109 Agg.....114	Tlr, 1-ton, cargo.....5 Trk, 1/4-ton.....1 Trk, 3/4-ton, Wpn Carr.....4 Trk, 2 1/2-ton, cargo.....5	Orgn designed to provide recreation to Trs overseas. Has 4 Plats each capable of establishing a complete recreational Cen, including musical, theatrical, Rad, public address, library, movie, athletic, exchange, printing and publishing facilities. Wt (short tons): on wheels, 43; boxed, 47. Cubage (ship tons): on wheels, 298; boxed, 183.

¹ All figures include Atchd Med and Ch.

² Additional transportation requirements furnished by QM Trk pool.

■ 160. CHEMICAL WARFARE UNITS:

a. *Air Force Units:*

(1) Supply Unit:

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
2	Cml Dep Co Avn T/O & E 3-418 (7 Feb 45)	O.....4 EM.....74 Agg.....78	Trk, ¼-ton.....3 Trk, 1½-ton, cargo.....1 Trk, 2½-ton, cargo.....4 Trk, 2½-ton, M27, bomb Sv.....1 Trk, Crane, swinging boom.....2 Trk, Cml Sv.....6 Tlr, 1-ton.....1 Tlr, Cml handling.....6	Normally assigned 1 per AFS Gen Dep supplying C Gp capable of performing Cml missions. Labor to be furnished by appropriate labor Trs or Civs. Establishes and operates an AF Cml Dep for Cl V Sup.

(2) Operations Unit:

3	Cml Co Air Opns T/O & E 3-457 (29 Sep 44)	O.....4 EM.....130 Agg.....134	Trk, ¼-ton.....5 Trk, 1½-ton.....1 Trk, 2½-ton.....1 Trk, bomb lift, M1.....17 Trk, Cml Sv.....17 Tlr, 1-ton, cargo.....1 Tlr, Cml handling.....17 Apparatus, Decon power driven.....1	When Cml Opns are being performed, unit is assigned to Wg or higher Hq and Atchd to the functioning C Gp. At other times, unit is Atchd to AAF's Gen Dep or such other Orgn as designated by theater AF Cmdr. Services a C Gp performing Cml missions. Sv includes filling and delivering Cml spray tanks and other Cml munitions to Ap C Gps; working in conjunction with Sq armament Pers in loading and arming tanks, Cml bombs, and incendiaries in planes; removing tanks from planes and assisting in decontamination of planes and tanks. In addition, this unit maintains and operates the Cl V Cml storage Dp.
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160. CHEMICAL WARFARE UNITS:

b. Combat Units:

(1) *Chemical Mortar Battalion, T/O & E 3-25 (29 Sep 44) : ^{1,2}*

	1	2	3	4	5	6
1	Item	Hq & Hq Co T/O & E 3-26 (29 Sep 44)	3 Mortar Co (ea) T/O & E 3-27 (29 Sep 44)	Total	Atchd Med	Aggre- gate
2	Officers.....	9	9	36	2	38
3	Warrant officers.....	1		1		1
4	Enlisted men.....	145	158	619	14	633
5	AGGREGATE.....	155	167	656	16	672
6	.30 cal carbine.....	121	130	511		511
7	.30 cal rifle.....	31	37	142		142
8	.45 cal pistol, automatic.....	3		3		3
9	.50 cal gun, machine, HB, flexible.....	3	3	12		12
10	2.36" launcher, rocket.....	5	5	20		20
11	4.2" mortar, chemical.....		12	36		36
12	Trailer, 1/4-ton.....	5	32	101	1	102
13	Trailer, 1-ton.....	13	4	25		25
14	Truck, 1/4-ton.....	6	32	102	1	103
15	Truck, 3/4-ton, weapons carrier.....	3	2	9	1	10
16	Truck, 1 1/4-ton, cargo.....		3	9		9
17	Truck, 2 1/2-ton, cargo.....	14	1	17		17
18	TOTAL MOTOR VEHICLES.....	23	38	127	2	139

¹ Normal attachment, 1 Bn per Inf Div. Fires gas, smoke, incendiaries, and HE.

² Wt (short tons): on wheels 411; boxed 496 Cubage (ship tons): on wheels 2,280; boxed 1,062.

ORGANIZATION

160. CHEMICAL WARFARE UNITS:

*b. Combat Units (Continued):**(2) Smoke Units:*

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
2	Hq & Hq Det, Cml Smoke Generator Co T/O & E 3-266S (28 Sep 44)	O..... 4 EM..... 7 Agg.....11	Trk, 1/4-ton.....1 Trk, 3/4-ton Wpn Carr.....1	Assigned as required for Adm and supervision of 3-8 Cml Smoke Generator Cos within an area of Comd.
3	Cml Smoke Gen Co T/O & E 3-267 (4 May 44, C1)	O..... 4 EM.....128 Agg.....132	For Unit Equipped with M1 Generator..... Tlr, 1-ton, cargo..... 1 Tlr, generator.....28 Tlr, Water Tank (250 Gal).. 2 Trk, 1/4-ton..... 5 Trk, 3/4-ton, Wpn Carr..... 3 Trk, 2 1/2-ton, cargo.....29 Generator, smoke, Mech, M1, 100 gal, (Mounted on 2 1/2-ton Trk)..... 24 For Unit Equipped with M2 Generator Tlr, 1/4-ton.....24 Tlr, 1-ton..... 1 Tlr, Water Tank (250 gal).. 2 Trk, 1/4-ton.....29 Trk, 3/4-ton, Wpn Carr..... 3 Trk, 2 1/4-ton, cargo..... 5 Generator, smoke, Mech, M2, 50 gal.....50	Designed for area screening (AA protection) of important surface Instls. 1 Co screens area 1-2 1/2 miles wide & several miles long depending on Wea. Equipped with mobile generating apparatus. Wt (short tons): on wheels 281; boxed 302. Cubage (ship tons): on wheels 1,665; boxed 1,271

160. CHEMICAL WARFARE UNITS:

c. Combat Support Units:

(1) *Supply Unit:*

1	2	3	4
Unit	Personnel	Vehicles	Remarks
2 Cml Dep Co T/O & E 3-67 (6 Jan 45)	O..... 5 EM.....150 Agg.....155	Tlr, 1-ton, cargo..... 4 Tlr, Cml Sv..... 3 Trk, 1/4-ton..... 1 Trk, 2 1/2-ton, cargo..... 4 Trk, 3/4-ton Wpn Carr..... 1 Trk, crane swinging boom..... 6	Normally assigned on basis of 1 Co per 150,000 men, to Armies. For Storage and issue of Cml Equip and munitions. Fills Cml munitions. May require labor Trs and additional Trans. 3 Plats, may operate independently Wt (short tons): on wheels 68; boxed 75. Cubage (ship tons): on wheels 450; boxed 386.

(2) *Maintenance Unit:*

3 Cml Maint Co T/O & E 3-47 (22 Nov 44)	O..... 3 EM.....90 Agg.....93	Tlr, 1/4-ton..... 1 Tlr, 1-ton, cargo..... 4 Trk, 1/4-ton..... 1 Trk, 3/4-ton, Wpn Carr..... 2 Trk, 2 1/2-ton, cargo..... 4 Trk, Mach Shop, M-4..... 1	Assigned on basis of 1 Co per 100,000 Trs, or 3 Cml Mortar Bns, to Armies and Com Z for 3d & 4th Ech Maint. Requires Trans for Movt. Wt (short tons): on wheels 40; boxed 44. Cubage (ship tons): on wheels 280; boxed 151.
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(3) *Special Units:*

4 Cml Warfare Gen Sv Co T/O & E 3-137S (9 Aug 44)	O..... 6 EM.....124 Agg.....130	Tlr, 1/4-ton..... 4 Tlr, 1-ton.....10 Tlr, Water Tank (250 gal).. 1 Tlr, Cml Sv..... 2 Trk, 1/4-ton..... 6 Trk, 3/4-ton, Wpn Carr..... 1 Trk, 2 1/2-ton, cargo..... 6 Trk, 2 1/2-ton, w/apparatus decontaminating M3A2.. 8 Trk, 2 1/2-ton, Mach Shop.... 1 Trk, crane, swinging boom.. 2	Attached to Armies and Lower Units to provide Sup, Maint, decontaminating and intelligence Sv. When decontamination becomes primary Sv, additional Pers must be Atchd for Dep functions. Can perform smoke Opus involving use of smoke pots. Can be used with Task Forces. Wt (short tons): on wheels 96; boxed 106. Cubage (ship tons): on wheels 700; boxed 547.
5 Cml Decon Co T/O & E 3-217 (12 Oct 43, C1, 2, 3)	O..... 5 EM.....165 Agg.....170	Tlr, 1-ton, cargo.....17 Trk, 1/4-ton..... 5 Trk, 2 1/2-ton, cargo.....17 Apparatus, Decon Power driven.....12	Assigned to armies and Com Z on the basis of 1 per 100,000 men for large scale decontamination of vital areas or Instls. Also decontaminates large quantities of Mat Equip also suitable for fire fighting and Mbl shower Sv. Requires additional Trks for Mvmt. Wt (short tons): on wheels 143; boxed 180. Cubage (ship tons): on wheels 889; boxed 381.

160. CHEMICAL WARFARE UNITS:

d. Service Units:(1) *Administrative Units:*

1	2	3	4
Unit	Personnel	Vehicles	Remarks
2 H & Hq Co Cml Base Dep T/O & E 3-620-1T (19 Dec 44)	O.....12 EM.....57 Agg.....69	Trk, 1/4-ton..... 3 Trk, 3/4-ton, Wpn Carr..... 1	Assigned 1 per Gen or Branch Dep in Com Z. Serving 100,000 or more Trs. Provides Comd, Tech, and Adm Pers only. Supervises Opns of Cml Base Proc Co & Cml Base Dep & Maint Co

(2) *Supply and Maintenance Units:*

3 Cml Base Dep Co T/O & E 3-117 (16 Nov 43) C1)	O..... 7 EM.....102 Agg.....109	Tlr, 1/4-ton..... 2 Tlr, 1-ton..... 2 Tlr, Cml Sv, M1..... 2 Trk, 1/4-ton..... 3 Trk, 3/4-ton, Wpn Carr..... 1 Trk, 2 1/2-ton, cargo..... 3 Trk, crane, swinging boom 3	Normally assigned to a Cml Sec of a Base Gen Dep to handle Cml munitions and Mat for Approx 100,000 Trs. Does not maintain & Rep Cml Mat. Will require extra labor to perform mission in gas warfare. Wt (short tons): on wheels 54; boxed 59. Cubage (ship tons): on wheels 397; boxed 332.
4 Cml Base Dep & Maint Co T/O & E 3-147T (19 Dec 44)	O..... 5 EM.....91 Agg.....96	Tlr, 1-ton..... 1 Trk, 1/4-ton..... 3 Trk, 3/4-ton, Wpn Carr..... 1 Trk, 2 1/2-ton, cargo..... 1	Functions as component of a base Dep or Cml Sec of a base Gen Dep under supervision of Hq & Hq Co, Cml Base Dep, T/O & E 3-620-1T. Provides Sup and Maint for 100,000 Trs.
5 Cml Dep Co, T/O & E 3-67	See Par 160c, line 2.		May be assigned in Com Z.
6 Cml Maint Co T/O & E 3-47	See Par 160c, line 3.		May be required in Com Z Secs in Gas Warfare.

160. CHEMICAL WARFARE UNITS:

d. Service Units (Continued):

(3) *Miscellaneous Units:*

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
7	Cml Base Processing Co T/O 3-87 (17 May 44)	O..... 4 EM.....62 Agg.....66	Tlr, 1-ton..... 1 Trk, 1/4-ton..... 1 Trk, 3/4-ton, Wpn Carr..... 1 Trk, 2 1/2-ton, cargo..... 1	Assigned to a Cml Base Dep or Cml Sec of a Base Gen Dep on the basis of one Co per 300,000 Trs. Equipped with one fixed impregnating plant. Additional labor required. Wt (short tons): on wheels 50; boxed 55. Cubage (ship tons): on wheels 217; boxed 193.
8	Cml Processing Co T of Opns) T/O & E 3-77 (1 Mar 44)	O..... 5 EM.....135 Agg.....140	Tlr, 1-ton, cargo..... 1 Trk, 1/4-ton..... 2 Trk, 3/4-ton, Wpn Carr..... 1 Trk, 2 1/2-ton, cargo..... 3	Established in Com Z for impregnating clothing. Equipped with 2 semi-fixed impregnating plants. Assigned on a basis of 1 Co per 50,000 Trs in cold or Temperate Z and 1 Co per 25,000 Trs in Tropics. Not completely Mtz. Wt (short tons): on wheels 101; boxed 111. Cubage (ship tons): on wheels 445; boxed 393.
9	Cml Decontaminating Co T/O & E 3-217	See Par 160c, line 5		Also assigned to Com Z for decontamination work if required.
10	Cml Lab Co T/O & E 3-97 (3 Jun 44)	O..... 8 EM.....50 Agg.....58	Tlr, 1-ton, cargo..... 1 Trk, 1/4-ton..... 1 Trk, 3/4-ton, Wpn Carr..... 1 Trk, 2 1/2-ton, cargo..... 1	Normally assigned 1 Co to a T of Opns. Analyzes enemy Cml agents, and Mat. Checks protective clothing and Equip. Wt (short tons): on wheels 23; boxed 25. Cubage (ship tons): on wheels 100; boxed 76.

160. CHEMICAL WARFARE UNITS:

e. Chemical Warfare Service Organization T/O & E 3-500 (15 Dec 44):

(Units made up from this organization should be designated as ----- Chemical ----- Bn, Co, or Plat according to major function. If all functions are equally represented, designate as 'Service' unit. Teams from this organization may be used to augment existing units to enable them to perform additional functions. Designation of Plat, Co or Bn depends on total number of personnel. Plat, not less than 40, Co not less than 100, Bn, 3 or more companies.) Insert number.

(1) *Administrative Units:*

1	2	3	4
Unit	Personnel	Vehicles	Remarks
2 HEADQUARTERS TEAMS			
AA	O..... 1		For control of 2 or more teams of strength not less than 40 individuals operating as a component and to which no officer is organically assigned.
Plat Hq	EM..... 1		
Component	Aggg..... 2		
AB	O..... 1	Trk, $\frac{3}{4}$ -ton, Wpns Carr..... 1	For control of 1 or more teams operating separately, composed of 40 or more men and to which no officer is organically assigned.
Plat Hq	EM..... 4		
Separate	Agg..... 5		
AC	O..... 2	Tlr, $\frac{1}{4}$ -ton..... 1	For control of 2 or more Plats. Co strength shall not be less than 100.
Co Hq	EM..... 9	Tlr, 1-ton..... 1	
	Agg..... 11	Trk, $\frac{1}{4}$ -ton..... 1	
		Trk, $\frac{3}{4}$ -ton, Wpns Carr..... 1	
		Trk, $2\frac{1}{2}$ -ton, cargo..... 1	
AD	O..... 4	Trk, $\frac{1}{4}$ -ton..... 1	For control of 3 to 6 Cos.
Bn Hq	EM..... 12	Trk, $\frac{3}{4}$ -ton, Wpns Carr..... 1	
	Agg..... 16		
3 MESS TEAMS			
AE	EM..... 4		40 to 100 individuals.
AF	EM..... 6		101 to 175 individuals.
AG	EM..... 8		176 to 225 individuals.
AH	EM..... 9		226 to 275 individuals.
AI	EM..... 11		276 to 325 individuals.
4 AUTO MECHANIC TEAMS			
AJ	EM..... 1		Provided on basis of 1 Mech per 15 Mtr Veh equivalents.
AK	EM..... 2		

160. CHEMICAL WARFARE UNITS:

e. Chemical Warfare Service Organization T/O & E 3-500 (15 Dec 44) (Continued):

(2) *Supply Units:*

1	2	3	4
Unit	Personnel	Vehicles	Remarks
5	DEPOT TEAMS		
CA	O.....	Trk, Cml Sv, M1..... 1	Serves 5,000 to 10,000 Trs.
	EM..... 8	Trk, Crane, swinging boom, M1..... 1	
	Agg..... 8		
CB	O..... 1	Trk, Cml Sv, M1..... 1	Serves 10,000 to 20,000 Trs.
	EM..... 17	Trk, crane, swinging boom, M1..... 2	
	Agg..... 18		
CC	O..... 1	Tlr, 1-ton..... 1	Serves 20,000 to 30,000 Trs.
	EM..... 32	Trk, 2½-ton, cargo..... 1	
	Agg..... 33	Trk, Cml Sv, M1..... 2	
		Trk, crane, swinging boom, M1..... 2	

(3) *Miscellaneous Units:*

6	MAINTENANCE TEAMS		
BA	EM..... 10		Serves 5,000 to 10,000 Trs.
	Agg..... 10		
BB	O..... 1		Serves 10,000 to 20,000 Trs.
	EM..... 19		
	Agg..... 20		
BC	O..... 1	Tlr, 1-ton..... 1	Serves 20,000 to 35,000 Trs.
	EM..... 31	Trk, ¼-ton..... 1	
	Agg..... 32	Trk, ¾-ton, Wpns Carr..... 1	
		Trk, 2½-ton, cargo..... 1	
		Trk, Mach Shop, M16A2..... 1	
BD	O..... 2	Tlr, 1-ton..... 1	Serves 35,000 to 50,000 Trs.
	EM..... 48	Trk, ¼-ton..... 1	
	Agg..... 50	Trk, ¾-ton, Wpns Carr..... 1	
		Trk, 2½-ton, cargo..... 1	
BE	O..... 3	Tlr, 1-ton..... 1	Serves 50,000 to 100,000 Tra.
	EM..... 64	Trk, ¼-ton..... 1	
	Agg..... 67	Trk, ¾-ton, Wpns Carr..... 1	
		Trk, 2½-ton, cargo..... 1	

160. CHEMICAL WARFARE UNITS:

e. Chemical Warfare Service Organization T/O & E 3-500 (15 Dec 44) (Continued):

(4) Miscellaneous

7	DECONTAMINATION TEAMS			
	DA	EM..... 6	Tlr, Water, 250 gal..... 1	Serves 5,000 to 10,000 Trs.
		Agg..... 6	Trk, 1/4-ton..... 1	
			Trk, 2 1/2-ton, cargo..... 1	
	DB	O..... 1	Tlr, Water, 250 gal..... 1	Serves 10,000 to 20,000 Trs.
		EM.....19	Trk, 1/4-ton..... 1	
		Agg.....20	Trk, 2 1/2-ton, cargo..... 1	
	DC		Apparatus, decontaminating, power driven, M3A2..... 2	Serves 20,000 to 30,000 Trs.
		O..... 1	Tlr, 1-ton..... 2	
		EM.....37	Tlr, Water, 250 gal..... 1	
		Agg.....38	Trk, 1/4-ton..... 1	
			Trk, 2 1/2-ton, cargo..... 2	
			Apparatus, decontaminating, power driven, M3A2..... 4	
8	PROCESSING TEAMS			
	EB	O..... 1	Tlr, 1-ton..... 1	Serves 25,000 Trs.
		EM.....34	Trk, 2 1/2-ton, cargo..... 1	
		Agg.....35		
	EC	O..... 2	Tlr, 1-ton..... 1	Serves 40,000 Trs.
		EM.....60	Trk, 2 1/2-ton, cargo..... 1	
		Agg.....62		
9	LABORATORY TEAMS			
	FA	O..... 1	Trk, 1/4-ton..... 1	Performs Sp duties in Cml Int and Surveillance.
		EM..... 4		
		Agg..... 5		
	FB	O..... 2	Trk, 1/4-ton..... 1	Analyzes Civ Agents, Materiel & Clothing. Serves 25,000 Trs.
		EM..... 9	Trk, 3/4-ton, Wpns Carr..... 1	
		Agg.....11	Trk, 2 1/2-ton, cargo..... 1	
	FC	O..... 3	Trk, 1/4-ton..... 1	Analyzes Civ Agents, Materiel & Clothing. Serves 50,000 Trs.
		EM.....17	Trk, 3/4-ton, Wpns Carr..... 1	
		Agg.....20	Trk, 2 1/2-ton, cargo..... 1	

■ 161. ENGINEER UNITS:

NOTES: See Paragraph 703 for stream crossing equipment
 705 for water supply information
 706 for explosives
 707 for intrenching sets

All figures include attached Medical or Chaplains

a. Air Force Units:

(1) *Administrative Units:*

1	2	3	4
Unit	Personnel	Vehicles	Remarks
2 Engr AF Hq Co, T/O & E 5-800-2 (6 Sept 43, C1)	O.....12 EM.....172 Agg.....184	Tlr, ¼-ton, cargo.....4 Tlr, 1-ton, cargo.....8 Tlr, 1-ton, Tk, 250-gal.....2 Trk, ¼-ton.....4 Trk, ¾-ton, Wpn Carr.....9 Trk, 2½-ton, cargo.....8 Trk, 5-6-ton, Trac.....1 Mbl Repro Equip.....1	Provides Pers and Equip for the AF Engr on all administrative, en- gineering, drafting, camouflage and reproduction functions. Con- sists of Co Hq, Engr Plat, Cam Plat and Repro Plat. Average area needed for unit Instl—3.8 acres.

(2) *Supply Units:*

3 Engr Dep Co, T/O & E 5-47 (23 Dec 44)	See Par 161 C, line 2.
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(3) *Maintenance Units:*

4 Engr Maint Co, T/O & E 5-157 (24 Aug 44)	See Par 161 C, line 10.
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161. ENGINEER UNITS:

a. Air Force Units:(4) *Construction Units:*

	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
5	Engr Avn Regt, T/O 5-411 (1 Apr 42, C1, 2, 3)	O.....114 EM.....2587 Agg.....2701	Auger, earth, Mtz..... 1 Compressor, Mtz.....12 Crane, Trac, towed..... 4 Amb.....4 Car, Half-track, M2.....13 Tlr, 1-ton, cargo.....58 Tlr, tank, 250-gal.....24 Tlr, 8-ton.....12 Tlr, 15-ton.....14 Tlr, 21-ton..... 4 Tlr, 1,500-gal, w/heating coils..... 7 Trk, ¼-ton.....52 Trk, ¾-ton, Comd.....17 Trk, ¾-ton, Wpn Carr.....15 Trk, 1½-ton, cargo.....10 Trk, 2½-ton, cargo.....28 Trk, 2½-ton, Dp.....123 Trk, tank, fuel, 750-gal..... 4 Trk, 4-, 5-ton, Dp, w/w.....42 Trk, 6-ton, prime mover.....15 Mbl, camera, copying..... 1 Clearing unit, Trac Mtd..... 1 Grader, Mtz.....18 Mbl map Repro..... 1 Mtz Rep Equip A & B..... 4 Shovel, ¾-cu yd.....2 Shovel, push, Trac Mtd..... 3 Shovel, ½-cu yd..... 9 Trac, 70-hp.....12 Trac, 95-hp..... 4 Trac, medium.....27 Trac, rubber-tired..... 9 Well Driller, Mtz..... 3 Asphalt Rep Equip, towed..... 3 Distributor emulsion, towed..... 4 Grader, rd, towed..... 3 Heater, asphalt, trailer type..... 4	This unit designed for Opns in a large theater where much work is concentrated in a small area. It acts as a Dep or pool for additional Equip which may be sent to the individual Bns as the need arises. The Bn is the usual field operating unit. The Bn is a balanced Orgn capable of executing complete Cons of an Adm. Consists of Hq & Hq & Sv Co and a varying number of Engr Avn Bns, 3 Bns are normally assigned to the Regt. The Bn is composed of a Hq and Hq & Sv Co and 3 line Cos. The Cos can function independently.
			<i>Vehicles—(Continued)</i>	
			Mixer, concrete, 14-cu ft, Tlr-Mtd..... 4	
			Mixer, rd material, Hv..... 1	
			Mixer, rd material, rotary tiller..... 6	
			Rock crusher, Tlr type..... 1	
			Roller, rubber-tired..... 9	
			Roller, sheep's foot triple unit..... 4	
			Roller, 5-, 7-ton tandem, Mtz..... 9	
			Roller, 10-ton, Mtz..... 4	
			Rooter, Hv..... 1	
			Rooter, M..... 1	
			Scraper, 8-cu yd..... 9	
			Scraper, 12-cu yd..... 3	
			Scraper, wheeled, 3½-cu yd.....27	
			Trencher, vertical boom..... 3	

161. ENGINEER UNITS:

a. Air Force Units:

(4) Construction (Continued):

1	2	3	4
Unit	Personnel	Vehicles	Remarks
6 Engr Avn Bn T/O & E 5-415 (15 May 44)	O..... 33 EM..... 774 Agg..... 807	Compressor, Mtz..... 3 Compressor, Tlr Mtd, 315 CFM..... 1 Tlr, ¼-ton..... 16 Tlr, 1-ton, cargo..... 18 Tlr, tank, 250-gal..... 8 Trk, ¼-ton..... 17 Trk, ¾-ton, Wpn Carr..... 11 Trk, 2½-ton, cargo..... 10 Trk, 2½-ton, tank, fuel, 750-gal..... 1 Trk, 2½-ton, Dp..... 37 Trk, 4, 5-ton, Dp..... 14 Trk, 4, 5-ton, wrecker..... 1 Trk, 6-ton, prime mover..... 6 Trk, Trac, 4, 5-ton..... 1 Crane, Trk, Mtd, ¾-yd..... 1 Crane, Trac-Oper, 20-ton..... 1 Distributor, bituminous, Tlr-Mtd..... 1 Ditching machine, crawler-Mtd..... 1 Grader, towed..... 2 Grader, Mtz..... 8 Heater, asphalt, Tlr-Mtd..... 1 Kettle, asphalt, Tlr-Mtd..... 4 Lubricator, Tlr-Mtd..... 4 Mixer, concrete, 14-cu ft Tlr-Mtd..... 1 Mixer, rotary tiller, Tlr-Mtd..... 1 Mower, Trac-Dr..... 1 Mtz, Rep, GP, Hv shop, Welding, ea..... 1	The basic Cons unit of an air force. A balanced Orgn capable of Cons a complete Adrm and maintain- ing, camouflaging and defending it. Vehicles—(Continued) Power plant, 5 kw, Tlr-Mtd..... 1 Pump, asphalt, Tlr-Mtd..... 1 Pump, asphalt, Tlr-Mtd..... 1 Pump, water, w/Distr Atchmt, Tlr-Mtd..... 1 Roller, road, gas-engine, 5, 8-ton..... 2 Roller, road, gas-engine, 10-ton..... 1 Roller, sheepsfoot..... 3 Roller, rd, towed..... 2 Roller, rd..... 1 Scraper, Mtz, 12-cu yd..... 3 Scraper, towed, 8-cu yd..... 7 Semi-Tlr, Tech Sup, 10-ton..... 1 Semi-Tlr, 20-ton (LB)..... 14 Shovel, ¾-cu yd..... 2 Sweeper, torary, Trac-powered..... 1 Tank, asphalt, Tlr-Mtd, 1,500-gal..... 2 Trac, 70-, 90-hp..... 11 Trac, rubber-tired..... 2 Welding Equip, Tlr-Mtd..... 1
7 Engr Avn Co T/O & E 5-417 (15 May 44)	O..... 5 EM..... 178 Agg..... 183	Compressor, Mtz..... 1 Tlr, ¼-ton, cargo..... 4 Tlr, 1-ton, cargo..... 4 Tlr, tank, 250-gal..... 2 Trk, ¼-ton..... 4 Trk, ¾-ton, Wpn Carr..... 2 Trk, 2½-ton, cargo..... 2 Trk, 2½-ton, Dp..... 9 Trk, 4-ton, Dp..... 3 Grader, Mtz..... 1 Kettle, asphalt, Tlr-Mtd..... 1 Lubricator, Tlr-Mtd..... 1 Roller, sheepsfoot..... 1 Scraper, towed, 8-cu yd..... 2 Semi-Tlr, 20-ton..... 3 Trac, 70-, 90-hp, crawler..... 3	The mission of this unit is to main- tain, rehabilitate and camouflage Adrm and to assist in their Def. Normally a Co operates as com- ponent of Engr Avn Bn but may operate separately on special missions.

161. ENGINEER UNITS:

a. Air Force Units:

(4) Construction Units (Continued):

1	1 Unit	2 Personnel	3 Vehicles	4 Remarks
8	Abn Engr Avn Bn T/O 5-455 (4 May 43)	O..... 28 WO..... 1 EM.....501 Agg.....530	Bicycles.....11 Tlr, 1-ton, cargo.....14 Trk, 1/4-ton.....23 Trk, 2 1/2-ton, cargo.....10 Grader, road, towed..... 7 Kettle, asphalt, Tlr-Mtd... 3 Loader, shovel, Trac-Mtd.. 2 Mixer, soil stabilization.... 2 Roller, sheepsfoot..... 3 Scraper, 7-cu ft..... 3 Trac, 20 DBHP, crawler...19 Trac, 23 DBHP, rubber- tired.....13 Trailer, Dp, 1/2-ton.....17	Cons, Maint, and Cam of advanced Adrms. Opns include landings and Adrms seized from the enemy and emergency work with Abn Equip to prepare fields for use by friendly Acft. Does only initial preparation of Adrms. Consists of Hq and Hq & Sv Co, and 3 Ltr Cos. Average area needed for unit Instl—11.1 acres. Wt (short tons): on wheels, 225; boxed, 250. Cubage (ship tons): on wheels, 900; boxed, 650.
9	Abn Engr Avn Co T/O 5-457 (4 May 43)	O..... 5 EM.....124 Agg.....129	Tlr, 1-ton, cargo.....3 Trk, 1/4-ton.....5 Trk, 2 1/2-ton, cargo.....2 Trac, 20 DBHP, crawler type.....5 Trac, 23 DBHP, rubber- tired.....3	Orgn exactly the same as Ltr Co, Abn Engr Avn Bn, intended for use with small air task forces and for rehabilitation or Cons of small isolated Adrms accessible only by air.

(5) Miscellaneous:

10	Engr Avn Cam Bn T/O & E 5-465 (17 May 43)	O..... 26 WO..... 1 EM.....573 Agg.....600	Amb, 3/4-ton..... 1 Compressor, Mtz..... 1 Tlr, 1/4-ton.....16 Tlr, 1-ton.....26 Tlr, tank, 250-gal..... 4 Trk, 1/4-ton.....17 Trk, 3/4-ton, Comd..... 5 Trk, 3/4-ton, Wpn Carr.....16 Trk, 2 1/2-ton, cargo.....39 Trk, 2 1/2-ton, Dp..... 2	Performs Cam inspection, disci- pline and training for Adrm Pers. Supplies Cam Mats and experi- ments with local Sits. Consists of Hq & Hq Co and 3 Cos of 3 Plats ea. Average area needed for unit Instl—12.3 acres. Entirely Mbl. Wt (short tons): on wheels, 500; boxed, 550. Cubage (ship tons): on wheels, 2,100; boxed, 1,350.
11	Engr Avn Topo Orgn T/O & E 5-400 (1 Nov 43)	Varies	Varies	Collects geographical and geodetic data and Surv Contl Info; pre- pares maps, charts, and plans from this data or other Info; re- produces and distributes maps, charts, target charts and plans as required by the AF Engr. May be organized as Engr Topo Co, Avn or Engr Topo Bn, Avn. Supplements theater facilities for ground forces in mapping and model making.

161. ENGINEER UNITS:

b. Combat Support Units:

(1) Organic Units:

1	2	3	4
Unit	Personnel	Vehicles	Remarks
2 Engr C Bn T/O & E 5-15 (13 Mar 44, C1)	O..... 29 WO..... 3 EM.....605 Agg.....637	Tlr, ¼-ton..... 9 Tlr, 1-ton.....22 Tlr, pole type.....10 Tlr, welding..... 1 Trk, ¼-ton.....16 Trk, ¾-ton, Wpn Carr.....13 Trk, 1½-ton, cargo..... 1 Trk, 2½-ton, cargo.....22 Trk, 2½-ton, Dp.....27 Trk, 4-ton, wrecker..... 1 Trk, 6-ton, prime mover..... 3 Semi-Tlr, 20-ton (low bed)..... 3 Shop, Mtz, GP..... 1 Trac, diesel, 55-65 DBHP.. 3 Compressor, Mtz..... 4	Performs Gen Engr work for Inf Div. Also is Atchd to Corps and Armies. Hq & Hq & Sv Co-3 Ltr Cos of 3 Plats each. Cos can function independently. Area required for unit Instl-7 acres. Entirely Mbl. Has 4-water Sup sets. Wt (short tons): on wheels 700; boxed 750. Cubage (ship tons): on wheels 2,800; boxed 2,200.
3 Armd Engr Bn T/O & E 5-215 (20 Nov 44)	O.....34 WO..... 3 EM.....637 Agg.....674	Tlr, 1-ton.....24 Tlr, pole type, 2½-ton..... 9 Tlr, welding..... 1 Tlr, AM, M10..... 2 Trk, ¼-ton.....27 Trk, ¾-ton, Amb KD..... 1 Trk, ¾-ton, Wpn Carr..... 8 Trk, 2½-ton, cargo.....27 Trk, 2½-ton, Dp.....18 Trk, 6-ton, cargo (Treadway)..... 6 Trk, Hv wrecker..... 1 Car, half-track, Amb..... 2 Carrier, half-track M3A1.....15 Compressor, Trk-Mtd..... 4 Semi-Tlr, 20-ton, LB..... 3 Shop, Mtz, GP..... 1 Trac, 55-65 DBHP..... 3	Facilitates Mvmt of the Armd Div and impedes hostile ground forces Hq & Hq Co-3 Ltr Co. Entirely Mbl. Has 4-water Sup sets. Has Tdwy Ferry set consisting of 72 ft of steel Tdwy Br. Wt (short tons): on wheels 619; boxed 680. Cubage (ship tons): on wheels 3,256; boxed 2,341.
4 Abn Engr Bn T/O & E 5-225T (16 Dec 44)	O..... 25 WO..... 2 EM.....481 Agg.....508	Tlr, ¼-ton..... 9 Tlr, 1-ton..... 8 Tlr, Dp, ½-ton.....12 Trk, ¼-ton.....21 Trk, 2½-ton, cargo..... 4 Trk, 2½-ton, Dp..... 4 Compressor, air Tlr-Mtd... 1 Trac, crawler, 20 DBHP..... 3 Mtrcycle.....25	Engr component of Abn Div. Performs Gen Engr work—organized to increase the combat effectiveness of Abn Div by assisting to gain objectives and then to hold them—especially to capture Adrms for early use. Hq & Hq & Sv Co, 2 Prcht Cos and 1 Gli Co. Prcht Cos normally Atchd to Prcht Regts of Abn Div. Gli Co normally accompanies the Gli Inf Regt of the Div. Prcht Cos prepared to deminish enemy Instls—Ad. a, factories, docks, utilities, etc.) Gli Co capable of more extensive Engr work than Prcht Cos—first duty on ground is to Rep landing fields and to make them reasonably safe for Acft.
Remarks—Continued			
Average area required for unit Instl—4.5 acres.			
Wt (short tons): on wheels 74; boxed 87.			
Cubage (ship tons): on wheels 489; boxed 225.			

161. ENGINEER UNITS:

b. Combat Support Units (Continued):(2) *Combat Units:*

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
5	Hq & Hq Co, Engr C Gp T/O & E 5-192 (12 Mar 45)	O.....16 EM.....64 Agg.....80	Tlr, 1/4-ton.....11 Tlr, 1-ton.....2 Trk, 1/4-ton.....6 Trk, 3/4-ton, Wpn Carr.....8 Trk, 2 1/2-ton, cargo.....2	Designed to support Corps or Army Trs. Coordinates and supervises a Gp normally composed of 4 Engr Bns or equivalent—generally consist- inf of a combination from any of the following units: C Bn, Hv Pon Bn, L Pon Co, Tdwy Br Co, Topo Bn or Sep Co, Cam Bn or Sep Co, W Sup Co, L Equip Co, Maint Co, Dp Trk Co, Dep Co. Average area required for unit Instl—1.5 acres. Wt (short tons): on wheels 50; boxed 60. Cubage (ship tons): on wheels 200; boxed 150.
6	Engr C Bn T/O & E 5-15 (13 May 44, C1)		When Sep Bn substitute 3 70- 90 DBHP Diesel Tracs.	See Par 161b, line 2.

(3) *Supply Units:*

7	Engr Dep Co T/O & E 5-47 (29 Dec 44)	See Par 161c, line 2.
8	Engr Parts Sup Sep Plat T/O & E 5-567 (9 Jun 43, C1)	See Par 161c, line 7.
9	Engr W Sup Co T/O & E 5-67 (3 Jan 45)	See Par 161c, line 8.

161. ENGINEER UNITS:

b. Combat Support Units (Continued):

(4) Maintenance Unit:

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
10	Engr Maint Co T/O & E 5-157 (24 Aug 44)	See Par 161c, line 10.		

(5) Construction & Bridging Units:

11	Engr C Bn T/O & E 5-15 (13 Mar 44)	See Par 161b, line 2.		
12	Engr L Equip Co T/O & E 5-367 (24 Aug 44)	O..... 4 EM.....114 Agg.....118	Auger, earth, Skid Mtd..... 2 Compressor, Trk Mtd..... 6 Crane, Trk Mtd..... 2 Grader, Rd, Mtz..... 6 Grader, Rd, towed type..... 2 Shovel, 1/2-cu yd..... 4 Scraper, 8-cu yd..... 2 Trac, 70- 90-DBHP..... 6 Trac, 35- 40-DBHP w/loader bucket..... 2 Tlr, 8-ton, LB..... 2 Tlr, 1-ton..... 2 Trk, 1/4-ton..... 3 Trk, 3/4-ton, Wpn Carr..... 2 Trk, 2 1/2-ton, cargo..... 3 Trk, 2 1/2-ton, Dp, w/w..... 8 Trk, 4-ton, cargo..... 2 Trk, Hv, wrecker, M1A1..... 1 Trk, 6-ton, prime mover.....10 Semi-Tlr, 20-ton, LB.....10 Lubricator, Tlr Mtd..... 1 Shop, Mtz, GP..... 1 Welding Equip, Tlr Mtd..... 1	A flexible pool of earth-moving Equip with operators to aug- ment Equip of C Bns for Cons and demolition work. Consists of Co Hq, 2 Equip Plats and 1 Sv Plat. This unit can work in shifts giving 24-hr per- formance. Normally assigned 1 per 2-3 non-Div C Bns. Wt (short tons): on wheels 811; boxed 892. Cubage (ship tons): on wheels 3,284; boxed 2,540.
13	Engr Gen Sv Regt T/O 5-21 (1 Apr 42, C1, 2)	See Par 161c, line 15.		
14	Engr Cons Bn T/O & E 5-75 (23 Dec 43, C1)	See Par 161c, line 14.		

161. ENGINEER UNITS:

b. Combat Support Units:(5) *Construction & Bridging Units (Continued):*

1	2	3	4
Unit	Personnel	Vehicles	Remarks
15 Engr Pon Br Co T/O & E 5-297 (New)	O..... 6 EM.....204 Agg.....210	Compressor, Mtz..... 2 Crane, Trk-Mtd, $\frac{3}{8}$ cu yd. 5 Semi-Trl, 20-ton (low bed).. 2 Shop, Mtz, GP..... 1 Trac, 70-90 DBHP..... 2 Trl, 2-wheel, slip pole type.....42 Trl, 2-wheel, utility pole type: 2 $\frac{1}{2}$ -ton, Type IV..... 1 2 $\frac{1}{2}$ -ton, Type VIIIA..... 3 Trl, 4-wheel, Sp tandem, 7-, 14-ton, 4DT..... 1 Trk, 2 $\frac{1}{2}$ -ton, 6x6, w/w, bolster body.....42 Welding Equip, No. 1, Trl Mtd..... 1 Trl, 1-ton..... 5 Trk, $\frac{1}{4}$ -ton..... 5 Trk, $\frac{3}{4}$ -ton, Wpn Carr..... 3	To Corps or Army as required. Co Hq, 2 Br Plats. Provides Tech Pers and Equip to Trans, main- tain and supervise Cons of M-4 Br. Cons assistance furnished by C Engr. Equipped with 180 ft of trestle and 436 ft of floating Br. Br will accommodate a load of 55 tons in a stream velocity of 10 ft per Sec. Trk, 2 $\frac{1}{2}$ -ton, cargo.....19 Trk, $\frac{3}{4}$ -ton, Wpn Carr, w/w..... 1 Trk, 2 $\frac{1}{2}$ -ton, Dp..... 8 Trk, 4-ton, cargo..... 3 Trk, 4-ton, wrecker..... 1 Trk, 6-ton, prime mover..... 2
16 Engr Panel Br Trans Co T/O & E 5-287 (New)	O..... 4 EM.....123 Agg.....127	Trl, 1-ton, cargo..... 2 Trk, $\frac{1}{4}$ -ton, 4x4..... 3 Trk, $\frac{3}{4}$ -ton, Wpns Carr..... 1 Trk, 2 $\frac{1}{2}$ -ton, cargo.....36 Trk, 2 $\frac{1}{2}$ -ton, cargo, w/w.....12 Trk, 2 $\frac{1}{2}$ -ton, cargo COE..... 2 Trk, 4-ton, wrecker..... 1	To Corps or Army as required. Hq Plat, 2 Br Plats. Provides Tech Pers and Equip to supervise load- ing, Trans and perform normal Maint of panel Br (Bailey type) Equip. Capable of Trans 160 ft of double single (or the equiva- lent) panel Br Equip.
17 Engr L Pon Co T/O & E 5-87 (11 May 44)	O..... 6 EM.....205 Agg.....211	Trl, 2-wheel, utility, pole type- 2 $\frac{1}{2}$ -ton: Type I.....51 2 $\frac{1}{2}$ -ton: Type IV..... 2 Trl, 1-ton..... 6 Trl, 8-ton..... 2 Trk, $\frac{1}{4}$ -ton..... 7 Trk, $\frac{3}{4}$ -ton, Wpn Carr..... 3 Trk, 2 $\frac{1}{2}$ -ton, cargo.....57 Trk, 4-ton, cargo..... 4 Trk, 4-ton, wrecker..... 1 Trac, 35 to 40 DBHP..... 2 Compressor, Mtz..... 1 Crane, Trk-Mtd..... 1	Maintains and Trans river-crossing Equip, assists in Cons. Hq Plat and 3 Plats (2 Br Plats and 1 L equipage Plat). Average area re- quired for unit Instl—4.6 acres. Sufficient organic Trans for Mvmt of all Pers and Equip. See Chap 7 for details of bridging Equip. Wt (short tons): on wheels 858; boxed 944. Cubage (ship tons): on wheels 4,121; boxed 3,064.
18 Engr Tdwy Br Co T/O & E 5-627 (6 Apr 45)	O..... 4 EM.....134 Agg.....138	Compressor, Trk Mtd..... 4 Crane, Trk Mtd..... 2 Trac, 55- 65 DBHP..... 2 Trl, 2 $\frac{1}{2}$ -ton, utility..... 2 Trl, 1-ton, cargo.....13 Semi-Trl, Low Bed, Front loading 20T..... 2 Trk, $\frac{1}{4}$ -ton..... 5 Trk, $\frac{3}{4}$ -ton..... 1 Trk, 2 $\frac{1}{2}$ -ton, cargo.....17 Trk, Hv wrecker..... 1 Trk, 6-ton, treadway.....36	This Co furnishes 864 ft of steel Tdwy Br for use by Hv Equip. Normal attachment is 1 Co per Armd Div and 1 per 2 Tk or TD Gps. For functions and characteristics, see Par 703. Completely Mbl. Wt (short tons): on wheels 1,396; boxed 1,536. Cubage (ship tons): on wheels 4,290; boxed 3,878.

161. ENGINEER UNITS:

b. Combat Support Units:

(5) *Construction & Bridging Units (Continued):*

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
19	Engr Hv Pon Bn T/O & E 5-275 (5 Dec 44)	O.....17 WO..... 3 EM.....361 Agg.....381	Tlr, welding..... 1 Semi-Tlr, ponton.....64 Semi-Tlr, 20-ton..... 4 Tlr, pole type, 2½-ton..... 8 Tlr, 1-ton.....10 Trk, ¼-ton..... 8 Trk, ¾-ton, Wpn Carr.....11 Trk, 1½-ton, cargo..... 1 Trk, 2½-ton, cargo, w/w.....15 Trk, 4-ton, cargo, w/w..... 4 Trk, Hv wrecker..... 2 Trk, 5- 6-ton, Trac, w/w.....64 Trk, 6-ton, cargo..... 4 Trac, 70-90 DBHP..... 4 Compressor, Mtz..... 1 Crane, Trk Mtd.....2 Shop, Mtz, Gen Rep.....1	Primarily a Br Trans and Maint unit. Can assist in Cons and under certain circumstances can construct Brs. Hq & Hq & Sv Co—2 Ltr Cos. Bridging Equip of the Bn comprises 4 complete units of Hv Pon equipage (each Br of 200 ft.) Average area required for unit Instl—15 acres. Sufficient Trans for Mvmt of all Pers and Equip. Wt (short tons): on wheels 1,628; boxed 1,791. Cubage (ship tons): on wheels 8,235; boxed 7,751.

161. ENGINEER UNITS:

b. Combat Support Units (Continued):

(6) Miscellaneous:

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
20	Engr Sp Brig T/O & E 5-510S (7 Apr 44)	O.....382 WO..... 15 EM...6,731 Agg...7,128	Trac, crawler, Diesel 70-90 DBHP, w/bulldozer.....33 Compressor, Trk Mtd..... 3 Crane, Trac, 20-ton..... 6 Shop Equip, Mtz Mach Shop, Hv..... 3 Mach Shop, L..... 6 Tool & Bench..... 6 Small Tool Rpr..... 6 Welding.....12 Shovel, crawler, Mtd 1/2-cu yd..... 9 Semi-Trk, low bed, 20-ton... 6 Trk, 1-ton, cargo.....71 Trk, 1-ton, water, 250-gal... 8 Trk, K52..... 1 Trk, 1/4-ton.....23 Trk, K51..... 1 Trk, 1/4-ton.....147 Trk, 3/4-ton, Wpn Carr.....18 Trk, 1 1/2-ton, cargo.....58 Trk, 2 1/2-ton, Amph.....36 Trk, 2 1/2-ton, cargo.....83 Trk, 2 1/2-ton, Dp.....15 Trk, 2 1/2-ton, Gas Tk 750- gal..... 9 Trk, 2 1/2-ton, instrument Rep..... 1 Trk, 2 1/2-ton, small arms Rep..... 2 Trk, 2 1/2-ton, wrecker..... 1 Trk, 4-ton, wrecker..... 4 Trk, 6-ton, prime mover.... 6 Boats: Comd/Navigation.....32 Lighter, Tk, 50 ft (LCM).....270 Patrol.....36 Fire & Salv.....15 Surf Landing, 36 ft (LCVP).....270 Power Utility.....21	Provides Pers and Equip for Trans of C Trs from a friendly near shore to a hostile far shore. Furnishes resupply for these Trs during early stages of establishment of beachhead. Near and far shores may be on same coast line. Operating distance of this Brig is Approx 100 mi. Can Trans 1 Div when Reinf by Navy LCT. Consists of Brig HQ, Hq Co; 3 boat and shore Regts ea with Hq Co, 1 boat Bn of Hq Co & 3 Ltr Cos and 1 Shore Bn of Hq Co & 3 Shore Cos; 1 Boat Maint Bn of Bn Hq, Hq Co and 3 Maint Cos; plus Atchd Med Bn, Ord Maint Co, Sig Co and QM Hq & Hq Co. Average area needed for unit Instl—101.3 acres w/o boats. Wt (short tons): on wheels 2,356; boxed 2,592. Cubage (ship tons): on wheels 14,576; boxed 10,243.

161. ENGINEER UNITS:

b. Combat Support Units:

(6) *Miscellaneous (Continued):*

1	2	3	4
Unit	Personnel	Vehicles	Remarks
21 Engr Sp Shop Bn T/O & E 5-535S (3 Sep 43, C1)	O..... 35 WO..... 3 EM..... 858 Agg..... 896	Crane, Trk Mtd..... 2 Trac, 80 DBHP..... 2 Mtrcl Solo..... 2 Trl, 1-ton., cargo..... 1 Trl, low bed, 16-ton..... 2 Trk, 1/4-ton..... 9 Trk, 3/4-ton, Comd..... 1 Trk, 3/4-ton, Wpn Carr..... 9 Trk, 2 1/2-ton, cargo..... 16 Trk, 4-ton, wrecker..... 1 Trk, 6-ton, prime mover..... 3 Compressor, Trk Mtd..... 1 Boats: Control..... 1 Fire, 36 ft..... 4 Fire & Salv, 50 ft..... 4 Power, utility..... 12	Rep unit for the Engr Sp Brig. Performs 4th and 5th Ech Maint. Normally assigned one (1) per 2-3 Engr Sp Brigs. Consists of Hq Det, Power Plant Co, Hull Rep Co, Salv & Dockage Co, Dep Co. Cos can function independently. Average area needed for unit Instl—16.06 acres w/o boats. Wt (short tons): on wheels 402; boxed 444. Cubage (ship tons) on wheels 2,122; boxed, 1,557.
22 Engr Topo Bn, Army T/O & E 5-55 (22 Aug 44)	O..... 19 WO..... 3 EM..... 404 Agg..... 426	Trl, 1/4-ton..... 4 Trl, 1-ton..... 32 Trl, 1-ton, 250 gal, water..... 1 Mtz Repro Equip..... 10 Trk, 1/4-ton..... 11 Trk, 3/4-ton, Wpn Carr..... 7 Trk, 1 1/2-ton, cargo..... 4 Trk, 2 1/2-ton, cargo..... 25 Trk, 2 1/2-ton, Tk, 750-gal..... 1 Trk, 4-ton, cargo..... 2 Trk, 4-ton, wrecker..... 1	Provides map Info adequate for Tac and Strat requirements of the Army by preparation of sketches, drawings, maps and map substitutes and the Distr and reproduction of existing maps of the T of Opns. Furnishes appropriate FA Surv Spt. Normally assigned 1 per Army. Entirely Mbl. Hq & Hq & Sv Co and 2 Cos (Repro Co & Photo-mapping Co.) Average area required for unit Instl—8.8 acres. Mtz reproduction Equip includes: Camera Sec..... 1 Laboratory Sec..... 1 Photographic Sec..... 1 Plate Grainer Sec..... 1 Plate Process Sec..... 1 Press Sec..... 4 Map Layout Sec..... 1 Wt (short tons): on wheels 344; boxed 378. Cubage (ship tons): on wheels 2,391; boxed 1,557.

161. ENGINEER UNITS:

b. Combat Support Units:

(6) Miscellaneous (Continued):

1	2	3	4
Unit	Personnel	Vehicles	Remarks
23 Engr Topo Co, Corps T/O & E 5-167 (26 Aug 44, C1)	O..... 5 EM.....113 Agg.....118	Tlr, 1-ton..... 7 Tlr, 1-ton, 250 gal, water... 1 Mtz Repro Equip..... 6 Trk, 1/4-ton..... 1 Trk, 3/4-ton, Wpn Carr..... 5 Trk, 2 1/2-ton, cargo..... 8 W Sup Equip..... 1	Provides map Info adequate for Tac and Strat requirements of the Corps by preparation of sketches, drawings, maps and map substitutes and the Distr and reproduction of existing maps of the T of Opns. Also furnishes FA Surv Spt. Mtz reproduction Equip includes: Camera Sec Combination Sec Photographic Sec Plate Grainer Sec Press Sec Entirely Mbl. Average area required for unit Instl—2.1 acres. Usually assigned 1 per Corps.
		Remarks (Continued) Wt (short tons): on wheels 97, boxed 107. Cubage (ship tons): on wheels 624; boxed 470.	
24 Engr Cam Bn, Army T/O & E 5-95 (13 Jan 45)	O..... 28 WO..... 2 EM.....339 Agg.....369	Compressor, Mtz..... 1 Tlr, 1/4-ton.....32 Tlr, 1-ton..... 7 Trk, 1/4-ton..... 8 Trk, 3/4-ton, Wpn Carr.....38 Trk, 2 1/2-ton, cargo..... 8	Prepares, plans, and supervises large scale Cam Instls; performs experimental work; facilitates Sup of Cam Mat; directs inspections; supervises Cam discipline and Tng for all Trs in an assigned area. Hq & Hq & Sv Co and 4 Ltr Cos. Wt (short tons): on wheels 203; boxed 223. Cubage (ship tons): on wheels 1,115; boxed 839.
25 Engr Cam Co T/O & E 5-97 (13 Jan 45)	O..... 5 EM.....62 Agg.....67	Tlr, 1/4-ton..... 8 Tlr, 1-ton..... 1 Trk, 1/4-ton..... 1 Trk, 3/4-ton, Wpn Carr..... 9 Trk, 2 1/2-ton, cargo..... 1	A Ltr Co of an Engr Cam Bn, Army with small additions in Pers & Equip may be used as a Spl task force unit. Normal Cam duties for a task force smaller than an Army. Consists of Co Hq and 4 Plats. Sep Co is organized for assignment to an independent Corps. Normally 1 Plat Atchd to each Div. Not completely Mbl.
26 Engr Tech Int Team (C) T/O & E 5-398T (6 Apr 45)	O..... 1 EM..... 3 Agg..... 4	Tlr, 1/4-ton..... 1 Trk, 1/4-ton..... 1	Examines and photographs new enemy Equip, fortifications, and Dmls; furnishes Tech Int for use in T of Opns.
27 Engr Tech Int Team (Research) T/O & E 5-399T (6 Apr 45)	O..... 3 EM..... 6 Agg..... 9	Trk, 1/4-ton..... 2 Trk, 2 1/2-ton, cargo..... 1	Examines and photographs new enemy Equip, fortifications, and Dmls, and supplies Info to ZI for further study; procures captured Equip and prepares it for shipment to ZI.

161. ENGINEER UNITS:

c. Service Force Units:

(1) Supply Units:

1	2	3	4
Unit	Personnel	Vehicles	Remarks
2 Engr Dep Co T/O & E 5-47 (29 Dec 44)	O..... 7 EM.....202 Agg.....209	Trl, LB, 20-ton..... 2 Trl, 1-ton..... 5 Trk, 1/4-ton..... 2 Trk, 3/4-ton, Wpn Carr..... 5 Trk, 2 1/2-ton, cargo..... 5 Trk, 2 1/2-ton, Dp..... 2 Trk, 6-ton, prime mover..... 2 Crane, Trk Mtd..... 1	Provides supervisory, Adm, and limited skilled labor Pers and Equip for operating Engr Deps whose function is to receive, store, and issue Engr Sup. Hq Plat and 3 Dep Plats. 1 Parts Sup Plat. Plats can function independently. Co can furnish Pers to operate a Dep of about 300,-000 sq ft of storage area. Average area required for unit Instl including storage area—11.3 acres. Mbl SL Maint Units (crew of 3 men per unit) can be Atchd. Gen Engr Trs and Dp Trk Cos may assist in the Mvmt, establishments, and Opns of Army Deps. Wt (short tons): on wheels 116; boxed 118. Cubage (ship tons): on wheels 661; boxed 469.
3 Hq & Hq Co, Co, Engr Base Dep T/O & E 5-592 (30 Jan 43, C1)	O.....11 WO..... 2 EM.....59 Agg.....72	Trk, 1/4-ton..... 2 Trk, 3/4-ton, Comd..... 1 Trk, 3/4-ton, Wpn Carr..... 2 <i>Remarks (Continued)</i> Wt (short tons): on wheels 10; boxed 11. Cubage (ship tons): on wheels 50; boxed 44.	This Hq Co provides the nucleus of Adm Pers for a Base Dep consisting of one or more of the following units: Engr Base Dep Co, Engr Parts Sup Co, Engr Base Equip Co, Engr Hv Shop Co, Engr Gas Generating unit. 1 Dep Hq and 1 Hq Co (Hq consists of Co Hq, Adm Sec, Dep Sup Sec, Sep Shop Sec & Trans Sec). Average area needed in unit Instl—1.0 acre.
4 Engr Base Dep Co T/O & E 5-267 (30 May 44)	O..... 5 EM.....160 Agg.....165	Trac, rubber-tired, 30DBHP..... 3 Trl, 1-ton, cargo..... 3 Trk, 1/4-ton..... 4 Trk, 3/4-ton, Wpn Carr..... 1 Trk, 2 1/2-ton, cargo..... 3 Crane, Trk Mtd, 3/4-cu yd.. 3 <i>Remarks (Continued)</i> Wt (short tons): on wheels 121; boxed 133. Cubage (ship tons): on wheels 327; boxed 237.	Receives, stores, and issues Engr Sups and Equip. Normally this unit will serve a force which includes 15,000 Engr Trs. Consists of Dep Hq Stf Sec, Co Hq, and 3 Plats. Designed to operate as a component of the Engr Base Dep. Average area needed for unit Instl—1.85 acres for Pers and organic Trans. Will need additional space for all which unit will handle.

161. ENGINEER UNITS:

c. Service Units:

(1) Supply Units (Continued):

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
5	Engr Base Equip Co T/O & E 5-377 (24 Jun 44)	O..... 5 EM.....168 Agg.....173	Trl, LB, 8-ton..... 4 Trk, ¼-ton..... 2 Trk, ¾-ton, Wpn Carr..... 3 Trk, 4-ton, cargo..... 4 Trk, 6-ton, prime mover.....18 Crane, ¾-cu yd, Trk Mtd.. 1 Semi-Trl, 20-ton, (LB).....18 Shop, Mtz, GP..... 1 Trk, Hv wrecker, M1A1..... 1 Trk, 2½-ton, 750-gal, gas tank..... 1 Lubricator, Trl-Mtd..... 2 Welding Equip, Trl-Mtd.... 1 <i>Remarks (Continued)</i> Wt (short tons): on wheels 784; boxed 862. Cubage (ship tons): on wheels 2,183; boxed 1,846.	This unit is designed to operate as a component unit of a base, Gen, or branch Dep. It will be charged with the following: 1. Assembly and initial conditioning of all Cons Equip received by the Dep for Dep stock. 2. Delivery of heavy Cons Equip, with operators, to Engr units in T of Opns, when required. 3. Reconditioning of Equip, including 1st and 2d Ech Rep, when returned by units. 4. Evac of damaged Hv Engr Equip in Com Z. 5. Provision of well drilling and Maint Pers for use of W Sup units when desired. Consists of Co Hq, Equip Plat, and Sv Plat.
6	Engr Parts Sup Co T/O 5-247 (23 Apr 43)	O..... 6 EM.....168 Agg.....174	Trac, rubber-tired, 30 HP... 1 Trk, ¾-ton, Comd..... 1 Trk, ¾-ton, Wpn Carr..... 4 Trk, 5- 6-ton, Trac..... 1 Semi-Trl, 20-ton..... 1 Mtrcl, solo..... 1 In order to operate as an independent unit, the following must be added. Crane, Trk Mtd..... 1 Trl, 1-ton, cargo..... 3 Trk, 2½-ton, cargo..... 3	Establish and operate an Engr spare parts Sup Dep whose function is to Sup spare parts for all Equip procured by Corps of Engineers. Usually operates as a component of Engr Dep Gp. Dep Hq, Hq Plat, Procurement Plat and Warehouse Plat. Under normal conditions will serve a force which includes 30,000 Engr Trs. Average area needed for warehouse, Vehs and Pers—2.82 acres. Wt (short tons): on wheels 40; boxed 44. Cubage (ship tons): on wheels 184; boxed 160.
7	Engr Parts Sup Sep Plat T/O & E 5-567 (9 Jun 43)	O..... 3 EM.....54 Agg.....57	Trk, ¼-ton..... 1 Trk, ¾-ton, Wpn Carr..... 1 Trk, 2½-ton, cargo..... 2 In order to operate independently the following must be provided: Crane, Trk Mtd, gas, ¾-cu yd..... 1 Trl, 1-ton, cargo..... 1	Sups spare parts for Engr Equip Normally operated as a component of the Engr Base Dep Gp and when so assigned can serve a force which includes 15,000 Engr Trs. Assigned one per Dep, base or theater where there is insufficient Engr Equip for Opn of a parts Sup Co. Average area needed for unit Instl —1 acre.

161. ENGINEER UNITS:

c. Service Force Units:

(1) Supply Units (Continued):

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
8	Engr W Sup Co T/O & E 5-67 (3 Jan 45)	O..... 6 EM.....130 Agg.....136	Tlr, ¼-ton..... 5 Tlr, 1-ton.....10 Trk, ¼-ton..... 5 Trk, ¾-ton, Wpn Carr..... 1 Trk, 2½-ton, cargo..... 8 Trk, 2½-ton, Dp..... 3 Water purification unit, diatomite, portable..... 9 Trk, 2½-ton, tank, 750 gal.....18 Trk, 4-5-ton, Trac..... 6	Purifies, stores and distributes water. Co Hq, 3 production Plats, and Distr Plat. Production Plats, can operate independently. Capacity production—27,000 gal/ hr Distr—21,600 gal tank load. Average area for unit Instl—1.6 acres. Wt (short tons): on wheels 124; boxed 136. Cuhage (ship tons): on wheels 718; boxed 506.
9	Engr Pet Distr Co, T/O & E 5-327 (24 Jul 44, C1)	See Par 161c, line 21.		

(2) Maintenance Units:

10	Engr Maint Co T/O & E 5-157 (24 Aug 44)	O..... 6 EM.....185 Agg.....191	Shop, Mtz, Elec Rep..... 2 Shop, Mtz, Gen Rep..... 2 Shop, Mtz, Mach shop, Hv 2 Shop, Mtz, Mach shop, L.... 2 Shop, Mtz, tool Rep..... 1 Shop, Mtz, tool & bench..... 2 Tlr, 1-ton, cargo.....13 Tlr, 1-ton, 250-gal, water tk 1 Tlr, low hed, 20-ton..... 2 Trk, ¼-ton..... 4 Trk, ¾-ton, Wpn Carr..... 9 Trk, 2½-ton, cargo.....20 Trk, Hv wrecker, M1A1..... 3 Lubricator, Tlr Mtd..... 2 Power plant, 5kw, Tlr-mtd.. 5	Operates Mbl shops for 3d Ech Maint of Engr Equip and sup- plements Cons by jobsite fabri- cation. 1 Hq Plat, 2 Maint Plats, and 1 Contact Plat. The Maint Plats make Rep on Equip that can be moved to their bases of Opns. The Contact Plat makes emer- gency Rep to Equip that cannot be easily moved. Completely Mhl. Average area required for unit Instl—4.1 acres. Wt (short tons): on wheels 322; boxed 354. Cuhage (ship tons): on wheels 1,868; boxed 1,422.
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161. ENGINEER UNITS:

c. Service Force Units:(2) *Maintenance Units (Continued):*

1	2	3	4
Unit	Personnel	Vehicles	Remarks
11 Engr Hv Shop Co T/O & E 5-357 (11 Oct 44)	O..... 6 EM.....165 Agg.....171	Tlr, 1-ton, Tk, 250-gal..... 1 Trk, ¼-ton..... 2 Trk, ¾-ton, Wpn Carr..... 4 Trk, 4-ton, wrecker..... 1 Trk, Hv wrecker, M1..... 1 Lubricator, Tlr-Mtd..... 1 Trk, 2½-ton, cargo, w/w..... 3 Semi-Tlr, Front loading 20-ton..... 1	Non-mobile base shop. Provides 5th Ech Rep for all Engr Equip. Serves balanced field force of 100,- 000-200,000 Trs. Hq Plat, Manufacturing Plat, and a Rep Plat. Normally operates by assignment to an Engr Dep Gp. Average area needed for unit Instl —3.2 acres. Shop Equip, GP Rep.....1 Shop Equip, 5th Ech: Set No. 1—electrical.....1 Set No. 2—forge.....1 Set No. 3—Gen Rep.....1 Set No. 4—machine shop.....1 Set No. 5—motor.....1 Set No. 6—welding.....1 Set No. 7—woodworking.....1 Set No. 8—toolroom, heavy.....1
12 Engr Base Equip Co T/O & E 5-377 (24 Jan 44)	See Par 161c, line 5.	Remarks—(Continued) Wt (short tons): on wheels 154; boxed 179. Cubage (ship tons): on wheels 528; boxed 507.	

(3) *Construction Units:*

13 Hq & Hq Co Engr Cons Gp T/O & E 5-72 (23 Dec 43, C1, 2)	O.....13 WO..... 1 EM.....80 Agg.....94	Tlr, ¼-ton..... 6 Tlr, 1-ton..... 1 Tlr, 250-gal, water..... 1 Trk, ¼-ton..... 8 Trk, ¾-ton, Wpn Carr..... 1 Trk, 1½-ton, cargo..... 5 Trk, 2½-ton, cargo..... 2	The Engr Cons Gp is a specialized Orgn designed, trained, and equipped for Gen Engr Cons in Com Z or ZI. The Gp con- sists of a Hq & Hq Co, a Gp Med Det, and 3 or more Engr Cons Bns. Other Engr units may be Atchd as required. The Gp Hq supervises the work of the Atchd Cons Bns or other units.
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161. ENGINEER UNITS:

c. Service Force Units:

(3) Construction Units (Continued):

1	2	3	4
Unit	Personnel	Vehicles	Remarks
14 Engr Cons Bn T/O & E 5-75 (23 Dec 43, C1)	O..... 29 WO..... 2 EM..... 869 Agg..... 900	Compressor, Trk Mtd..... 8 Crane, Trac operated, 20-ton..... 1 Crane, Trk Mtd, ¾-cu yd.. 2 Grader, Mtz..... 3 Grader, Towed..... 1 Lubricator, Tlr-Mtd..... 4 Mixer, Concrete, Tlr-Mtd.. 2 Power Plant, 5 Kw, Tlr Mtd..... 1 Pump, centrifugal, Tlr Mtd 5 Roller, Sheepsfoot, towed... 2 Roller, road, 10-ton..... 2 Roller, road, 5-8-ton..... 1 Rooter, 5-tooth..... 2 Scraper, towed, 8-cu yd.... 6 Semi-Tlr, LB, 20-ton..... 12 Shop Equip, 3d Ech, Mtz: Shop, GP..... 1 Shop, Mach, Hv..... 1 Shovel, ¾-cu yd..... 2 Trac, 70-90 DBHP w/angle dozer..... 10 Trk, ¼-ton..... 27 Trk, ¾-ton, Wpn Carr..... 2 Trk, 1½-ton, cargo..... 15 Trk, 2½-ton, Dp, w/w..... 40 Trk, 2½-ton, cargo..... 1 Tlr, ¼-ton..... 1 Tlr, 1-ton..... 23 Tlr, 250-gal tank, water..... 4 Trk, 4-ton, wrecker..... 1 Trk, 6-ton, prime mover.... 12	Gen Engr work requiring a high percentage of skilled labor, such as Cons of Brs, highways, RRs, cantonments, Hosps, etc. Hq & Hq Sv Co and 3-Ltr Cos. Wt (short tons): on wheels 1,130; boxed 1,240. Cubage (ship tons): on wheels 5,875; boxed 4,061.
15 Engr Gen Sv Regt T/O 5-21 (1 Apr 42, C1, 2)	O..... 51 WO..... 3 EM..... 1,212 Agg..... 1,266	Amb..... 1 Tlr, for tractor..... 8 Tlr, 1-ton..... 29 Trk, ¼-ton..... 5 Trk, ¾-ton, Comd..... 11 Trk, ¾-ton, Wpn Carr..... 26 Trk, 2½-ton, cargo..... 21 Trk, 2½-ton, Dp..... 24 Trk, 4-ton, cargo..... 8 Trk, 4-ton, wrecker..... 1 Trk, 6-ton, prime mover.... 2 Trac, 35DBHP..... 8 Auger, earth, Mtz..... 1 Compressor, Mtz..... 8 Grader, Road, Mtz..... 2 Shop, Mtz, GP..... 1 Shop, welding, Tlr Mtd..... 1 Shovel, ½-cu yd..... 2 Mtrcl, Solo..... 8	Gen Engr work requiring high percentage of skilled labor, such as Cons of Brs, highways, RRs cantonments, Hosps, etc. Other Sv units assigned as needed, such as 1 Dp Trk Co, or Elms of Equip Cos. Hq & Hq & Sv Co plus 2 Bns of 3 Cos each. Cos can function independently. Trans for Equip only. To be completely Mbl requires additional Trans for approx 1,086 individuals. Wt (short tons): on wheels 802; boxed 882. Cubage (ship tons): on wheels 3,919; boxed 2,881.

161. ENGINEER UNITS:

c. Service Force Units:

(3) Construction Units (Continued):

1	2	3	4
Unit	Personnel	Vehicles	Remarks
16 Engr Gen Sv Regt T/O & E 5-121 (27 Sep 44)	O..... 86 WO..... 2 EM.....1,707 Agg.....1,795	Compressor, Mtz.....12 Crane, Trk-Mtd, ¾-cu yd.. 1 Grader, Rd, Mtz..... 3 Lubricator, Tlr-Mtd..... 1 Mixer, concrete, 14-cu ft, Tlr-Mtd..... 1 Semi-Tlr, 20-ton, (LB).....14 Shop, Mtz, GP Rep..... 2 Shovel, ¾-cu yd..... 2 Trac, 70-90-DBHP.....12 Welding Equip, Tlr-Mtd... 1 Tlr, ¼-ton..... 5 Tlr, 1-ton, cargo.....41 Tlr, 1-ton, tank, 250-gal..10	Performs Gen Engr work. Consists of Hq and Hq and Sv Co and 3 Bns, each with Hq and Hv Det and 3 Ltr Cos. Vehicles—(Continued) Trk, ¼-ton.....37 Trk, ¾-ton, Amb..... 1 Trk, ¾-ton, Wpn Carr..... 8 Trk, 1½-ton, cargo.....31 Trk, 2½-ton, cargo.....13 Trk, 2½-ton, dump, w/w.....53 Trk, 4-ton, wrecker..... 1 Trk, 6-ton, prime mover w/w.....14
17 Engr Gen Sv Bn T/O & E 5-135 (27 Sep 44)	O..... 37 WO..... 2 EM.....797 Agg.....836	Compressor, Mtz..... 6 Crane, Trk-Mtd, ¾-cu yd.. 1 Grader, Rd, Mtz..... 2 Lubricator, Tlr-Mtd..... 1 Mixer, concrete, 14-cu ft, Tlr-Mtd..... 1 Semi-Tlr, 20-ton, (LB)..... 7 Shop, Mtz, GP Rep..... 1 Shovel, ¾-cu yd..... 1 Trac, 70-90-DBHP..... 6 Welding Equip, Tlr-Mtd... 1 Tlr, ¼-ton..... 3 Tlr, 1-ton, cargo.....21 Tlr, 1-ton, tank, 250-gal... 5 Trk, ¼-ton.....17	Performs Gen Engr tasks. Consists of Hq and Hq and Sv Co, and 4 Ltr Cos. For use where there is insufficient work to warrant assignment of Gen Sv Regt. Vehicles—(Continued) Trk, ¾-ton, Amb..... 1 Trk, ¾-ton, Wpn Carr..... 5 Trk, 1½-ton, cargo.....12 Trk, 2½-ton, cargo..... 9 Trk, 2½-ton, dump, w/w.....28 Trk, 4-ton, wrecker..... 1 Trk, 6-ton, prime mover w/w..... 7
18 Hq & Hq Co, Engr Port Cons & Rep Gp T/O & E 5-52 (16 Sep 44, C1, 2)	O..... 17 EM.....255 Agg.....272	Compressor, Tlr Mtd..... 4 Crane, Trk Mtd..... 2 Shovel ¾-cu yd..... 2 Trac, 70-90 DBHP..... 4 Tlr, pole type, 2½-ton..... 3 Tlr, Tk, 250-gal..... 4 Trk, ¼-ton..... 4 Trk, ¾-ton, Wpn Carr..... 3 Trk, 2½-ton, cargo..... 2 Trk, 2½-ton, Dp, w/w..... 4 Trk, 6-ton, prime mover w/w..... 4 Mixer, 14-cu ft, Tlr Mtd..... 2 Lubricator, Tlr Mtd..... 1 Shop Equipment, 3d Ech Mtz: Set No. 3, GP..... 1 Set No. 4, Mach Shop, Hv.. 1 Pump, centrifugal, Tlr Mtd 5 Semi-Tlr, 20-ton..... 4 Shovel, 2-cu yd (non-std).... 2 Welding Equip, Tlr Mtd.... 6	This Co furnishes skilled Tech specialists, supervisors and Equip required for Cons and Rep of waterfront establishments and harbor facilities. 1 per major captured or liberated port. Consists of Gp Hq and Hq Co. Hq Co consists of Co Hq, Hq Plat and a Cons Plat. The capacity is determined by its assignment and the additional Sv units or Civ laborers Atchd. Average area required for unit Instl—2.7 acres. A Port Cons and Rep Gp may consist of one or more of the following: Hq & Hq Co, Fin Sec, Sig Sec, Eng Cons Bn, Engr Gen Sv Regt or Bn, QM Trk Co, QM Sv Bn, or Port Bn or Civ Labor, Med Det, MP Co or Det. Some naval Equip & Pers may also be needed.

161. ENGINEER UNITS:

c. Service Force Units:

(3) *Construction Units (Continued):*

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
19	Engr L Equip Co T/O & E 5-367 (24 Aug 44)	See Par 161b, line 12.		
20	Engr Dp Trk Co T/O & E 5-88 (9 May 44, C1, 2)	O..... 4 EM.....103 Agg.....107	Tlr, 1-ton..... 2 Tlr, 250 gal water tank..... 1 Trk, ¼-ton..... 3 Trk, ¾-ton, Wpn Carr..... 1 Trk, 2½-ton, cargo..... 2 Trk, 2½-ton, Dp, w/w.....48	Pool of Dp Trks for Cons work. May be assigned to any Engr unit requiring Trans of bulk Mats. Will move 120 ton of bulk Mat per trip. Co Hq and 2 Plats. Average area required for unit Instl —3.7 acres. Wt (short tons): on wheels 302; boxed 334. Cubage (ship tons): on wheels 2,040; boxed 1,250.
21	Engr Pet Distr Co T/O & E 5-327 (24 Jul 44, C1)	O..... 7 EM.....210 Agg.....217	Compressor, Trk Mtd..... 1 Shop, Mtz, GP Rep..... 1 Trac, 55DBHP..... 1 Tlr, pole type, 2½-ton.....12 Tlr, 250-gal, water tank..... 2 Tlr, Semi, 20-ton, LB..... 1 Trk, ¼-ton..... 6 Trk, ¾-ton, Wpn Carr..... 3 Trk, 2¼-ton, cargo.....12 Trk, 6-ton, prime mover..... 1 Welding Equip, Tlr Mtd..... 4	Mission is to locate, construct, operate, and maintain military pipeline systems as a means for transporting, distributing, and storing petroleum products in bulk in a T of Opns. 1 Hq Plat and 1 Operating Plat. Unit can construct and operate 120 miles of pipeline system, composed of 12 pumping Stas, 2 tank terminals, and 2 warehouses. One Engr Gen Sv Co is required when Cons of pipeline must be completed in a short time. Average area needed for unit Instl —3.53 acres.
			<i>Remarks—(Continued)</i> Wt (short tons): on wheels 157, boxed 173. Cubage (ship tons): on wheels 893; boxed 690.	
22	Hq & Hq & Sv Co, Engr Forestry Bn T/O & E 5-386 (25 Jun 43)	O..... 6 WO..... 2 EM.....65 Agg.....74 Med Atachd O..... 2 EM.....14 Agg.....16	Tlr, 1-ton, cargo..... 3 Trk, ¼-ton..... 1 Trk, ¾-ton, Comd..... 1 Trk, ¾-ton, Wpn Carr..... 7 Trk, 2½-ton, cargo..... 4 Amb..... 1	Hq for a type Bn of 3 to 6 Forestry Cos. Locates, cruises and maps available Bds of timber plans and supervises logging and milling Opns. Provides 3d and 4th Ech Maint for forestry Equip. Average area required for unit Instl —1.5 acres. Wt (short tons): on wheels, 41; boxed, 45. Cubage (ship tons): on wheels, 263; boxed, 177.

161. ENGINEER UNITS:

c. Service Force Units:(3) *Construction Units (Continued):*

1	2	3	4	
	Unit	Personnel	Vehicles	Remarks
23	Engr Forestry Co T/O & E 5-387 (4 Feb 44, C1)	O..... 5 EM.....150 Agg.....155	Tlr, 1-ton..... 2 Tlr, 4-wheel, 7-14-ton..... 3 Tlr, 1-ton, 250 gal. water..... 1 Trk, 1/4-ton..... 2 Trk, 1 1/2-ton, cargo..... 2 Trk, 2 1/2-ton, cargo..... 4 Trk, Trac, 4-ton..... 3 Trk, 6-ton, cargo..... 1 Trac, 70-90DBHP..... 3 Semi-Tlr, 20-ton..... 1 Arch, logging, towed type, crawler Mtd..... 1	Production of lumber from standing timber. Provides forestry prod- ucts, such as lumber, piling, cross ties, poles, etc. Capable of producing from 20,000 to 40,000 bd ft of Cons lumber per day. Needs Trans for Pers. Average area needed for unit Instl —2.65 acres. Wt (short tons): on wheels 154; boxed 169. Cubage (ship tons): on wheels 680; boxed 587.

161. ENGINEER UNITS:

c. Service Force Units:

(4) *Miscellaneous Units:*

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
24	Hq & Hq Co Engr Base Topo Bn T/O & E 5-186 (29 Dec 43)	O..... 7 WO..... 2 EM.....72 Agg.....81	Tlr, 1-ton..... 1 Trk, 1/4-ton..... 3 Trk, 3/4-ton, Comd..... 5 Trk, 2 1/2-ton, cargo..... 4 <i>Remarks—(Continued)</i> Wt (short tons): on wheels 38; boxed 42. Cubage (ship tons): on wheels; 235; boxed 167.	Designed to furnish the necessary Adm and operative overhead for a base Topo Bn to which base reproduction Cos, base photomapping Cos, base Surv Cos, and teams from T/O & E 5-500 are Atchd as required. No definite Bn Orgn is provided. This Orgn prepares topographical maps by photogrametric meth- ods, and furnishes to Army Topo Bns Adv Pts for Contl purposes.
25	Engr Base Repro- duction Co, Engr Base Topo Bn T/O & E 5-187 (29 Dec 43)	O..... 6 EM.....161 Agg.....167	Tlr, 1-ton, cargo..... 1 Tlr, 1-ton, Water Tank 250-gal..... 1 Trk, 3/4-ton, Comd..... 1 Trk, 2 1/2-ton, cargo..... 2	One or more Co may be assigned to Hq & Hq Co, Engr Base Topo Bn. Co Hq and 3 Lithographic Plats. Wt (short tons): on wheels 26; boxed 29. Cubage (ship tons): on wheels 160; boxed 120.
26	Engr Base Surv Co, Engr Base Topo Bn T/O & E 5-188 (29 Dec 43, C1, 2)	O..... 6 EM.....210 Agg.....216	Tlr, 1-ton.....10 Tlr, 1-ton, 250 gal tank, water..... 1 Tlr, utility, pole type, 2 1/2-ton.....10 Trk, 1/4-ton..... 2 Trk, 3/4-ton, Wpn Carr.....19 Trk, 2 1/2-ton, cargo..... 8	One or more Cos may be assigned to Hq & Hq Co, Engr Base Topo Bn. Co Hq and 3 Plats. Wt (short tons): on wheels 113; boxed 124. Cubage (ship tons): on wheels 706; boxed 439.
27	Engr Base Photo- mapping Co, Engr Base Topo Bn T/O & E 5-189 (29 Dec 43)	O..... 8 EM.....262 Agg.....270	Tlr, 1-ton..... 1 Trk, 3/4-ton, Comd..... 1 Trk, 2 1/2-ton, cargo..... 1	One or more Cos may be assigned to Hq & Hq Co, Engr Base Topo Bn. Co Hq and 3 mapping Plats. Wt (short tons): on wheels 8; boxed 9. Cubage (ship tons): on wheels 59; boxed 36

161. ENGINEER UNITS:

d. Engineer Service Organization, T/O & E 5-500. This is a cellular organization providing specialized teams of varying sizes, functions and capacities, for use where standard organizations are too large or cannot meet a particular engineer need of the theater. Teams may operate independently, may be combined to form composite platoons, companies, or battalions, or may be attached to a standard engineer unit.

(1) *Administrative Units:*

1	2	3	4
	Unit Personnel	Vehicles	Remarks
2	HEADQUARTERS AA O..... 1 Plat Hq EM..... 1 (com- Agg..... 2 ponent) AB O..... 1 Plat Hq EM..... 4 (Sep) Agg..... 5 AC O..... 2 Co Hq EM..... 8 Agg.....10 AD O..... 4 Bn Hq EM.....16 Agg.....20	 Tlr, 1/4-ton..... 1 Trk, 3/4-ton, Wpn Carr..... 1 Tlr, 1/4-ton..... 1 Tlr, 1-ton..... 1 Trk, 3/4-ton, Wpn Carr..... 1 Trk, 2 1/2-ton, cargo..... 1 Tlr, 1/4-ton..... 1 Trk, 1/4-ton..... 1 Trk, 3/4-ton, Wpn Carr..... 1	 For Plat when part of larger unit. For Sep Det of 2 or more teams consisting of not less than 20 men. For Det 2 or more Plat not less than 100 individuals. For Det of 30 or more Cos
3	MESS TEAMS AE EM..... 4 AF EM..... 6 AG EM..... 8 AH EM..... 9 AI EM.....11		40-100 Individuals 101-175 Individuals 176-225 Individuals 226-275 Individuals 276-325 Individuals
4	REPAIR TEAMS AJ EM..... 1 AK EM..... 2		2d Ech Maint Organic Veh, 1 team per 15 Veh.
5	SUPPLY TEAMS BA O..... 1 EM.....13 Agg.....14 BB O..... 1 EM.....26 Agg.....27 BC O..... 2 EM.....34 Agg.....36	 Trk, 3/4-ton, Wpn Carr..... 1 Trk, 3/4-ton, Wpn Carr..... 1 Trk, crane, Mtd..... 1 Trk, 3/4-ton, Wpn Carr..... 1 Trk, crane, Mtd..... 1	 Designated to operate small Engr Dep and pumps if augmented by Sv Trs or Civ labor. Team BA—15,000 Trs Team BB—30,000 Trs Team BC—75,000 Trs

161. ENGINEER UNITS:

d. Engineer Service Organization, T/O & E 5-500:

(1) Administrative Units (Continued):

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
6	BD Acetylene, Oxygen, Nitro Generating Gas Gene- rating Team	O..... 1 EM.....21 Agg.....23	Tlr, 250-gal, water tank..... 1 Trk, 2½-ton, cargo..... 1 Generating Plant, Set No. 1 Oxygen-Nitrogen, semi- Tlr..... 2 Generating Plant, Acetylene semi-Tlr, 500 cu ft/hr..... 1	Normally Atchd to Dep Co.
7	Carbon- Dioxide Supply Team BE	EM..... 3		Operates converters for Sup of fire extinguisher gases. One team should accompany 5 converters or less.

(2) Water Supply and Transportation Units:

8	WATER PURIFICATION TEAMS CA CB	EM..... 6 EM..... 8	Water Supply Set..... 1 Trk, 2½-ton, cargo..... 1 Water Supply Set No. 5..... 1 Trk, 2½-ton, cargo..... 1 Mobile Purification Unit: Cap 4,200 gals/hr	Operates one water Pt 600 gal per hr
9	CC Water Distillation Team	EM..... 5		Capacity 2500 gals day.
10	CD Well Drilling Team	EM.....14	Drill Rig, Percussion or Rotary..... 1 Flat bed with frame and winch, 4-ton..... 1 Tlr, 8-ton..... 1	2-Shift Opn.
11	WATER TRANSPORTATION TEAMS CE CF	EM..... 9 EM.....13	Trk, 2½-ton, 700-gal water tank..... 5 Semi-Tlr Tankers, 1500 gal..... 8 Trk, Tracs, 4-5-ton..... 8	Bulk Trans, 3500 gal/trip. Bulk Trans, 12,000 gal/trip.
12	DUMP TRUCK TEAMS CG CH	EM.....20 O..... 1 EM.....41 Agg.....42	Trk, 2½-ton, Dp.....12 Trk, 2½-ton, Dp.....24	Capacity 30 tons/trip. Capacity 60 tons/trip.
13	CI Dump Truck Augmen- tation Team	EM.....24		Provides extra shift Trk drivers for T/O & E 5-88.

161. ENGINEER UNITS:

d. *Engineer Service Organization, T/O & E 5-500 (Continued) :*(3) *Maintenance and Special Equipment Teams:*

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
14	MAINTENANCE TEAMS			
	DA	EM..... 6	Shop, GP..... 1	3d & 4th Ech Maint of Engr Equip for 5,000 Trs. Can serve 10,000 Trs.
	DB	O..... 1 EM..... 8 Agg..... 9	Trk, 2½-ton, cargo, w/w.... 1 Shop, Mtz, GP..... 1	
	DC	O..... 1 EM..... 14 Agg..... 15	Shop, Mtz, GP..... 1 Machine Shop, Hv, Mtz.... 1 Trk, 2½-ton, cargo, w/w.... 1	Can serve 15,000 Trs.
	DD	O..... 1 EM..... 39 Agg..... 40	Shop, Mtz, GP..... 1 Wrecker, 4-ton..... 1 Machine Shop, Hv, Mtz.... 1 Machine Shop, L, Mtz.... 1 Shop, tool and bench, Mtz 1 Trk, 2½-ton, cargo, w/w.... 1	Can serve 20,000 Trs.
	DE	O..... 2 EM..... 58 Agg..... 60	Shop, Elec Rep, Mtz..... 1 Shop, Mtz, GP..... 3 Machine Shop, Hv, Mtz.... 1 Machine Shop, L, Mtz.... 1 Shop, tool and bench, Mtz 1 Trk, 2½-ton, cargo w/w.... 2 Wrecker, 4-ton..... 1 Prime mover, 6-ton..... 1 Trk, Hv, wrecking..... 1	Can serve 50,000 Trs.
15	DF Mobile Searchlight Maintenance Team	EM..... 3	Shop, Elec Rep, Mtz..... 1 Trk, 2½-ton, cargo, w/w.... 1	Maint for 30 SLs.
16	REFRIGERATION MAINTENANCE TEAMS			
	DG	EM..... 3	Wpn Carr, ¾-ton..... 1	3d Ech Maint Air Conditioning and Refr machinery.
	DH	O..... 1 EM..... 17 Agg..... 18		4th & 5th Ech Maint Air conditioning and Refr machinery. Employed on ratio 1 to 10 DG teams.
17	DI Foundry Team	O..... 1 EM..... 16 Agg..... 17	Shop Equip Set No. 9, Foundry..... 1	Normally assigned to Hv Shop Co.
18	DJ Sawmill Team	EM..... 10	Sawmill, portable..... 1	Can operate one portable sawmill. Additional Pers necessary for logging and handling finished product.
19	DK Rockensher Team	EM..... 7	Unit, Semi-Tlr, Mtd..... 2 Crushing & Screening Plant..... 1	Capable of 2 shift Opn. 2 shift of 2 unit crushing and screening plant. Cap 25 cu vos/hr.

161. ENGINEER UNITS:

d. Engineer Service Organization, T/O & E 5-500:

(3) *Maintenance and Special Equipment Teams (Continued) :*

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
20	DL Welding Team	EM.....10	Welding Equip Set No. 1 Electric Arc, Tlr Mtd..... 5 Tlr, ¼-ton..... 1 Trk, ¼-ton..... 1 Trk, ¾-ton, Wpn Carr..... 2	Atchd to other Engr units for Hv welding requirements.
21	DM Pipeline Operating Detachment	O..... 1 EM.....24 Agg.....25	Tlr, 2 wheel, pole..... 1 Tlr, ¼-ton..... 1 Trk, ¼-ton..... 2 Trk, ¾-ton, Wpn Carr..... 1 Trk, 2½-ton, cargo..... 1	For Opn of bulk Pet terminal 50,- 000 gallon tankage, necessary tanker unloading facilities and 3 pump station pipeline system.

(4) *Utilities Teams:*

22	EA 1000 Man Utilities Team	O..... 1 EM.....17 Agg.....18	Grader, Road, Mtz..... 1 Tilt Dozer, 40 DBHP, Diesel..... 1 Trk, ¾-ton, Wpn Carr..... 1 Trk, 2½-ton, Dp..... 1	
23	EB 1500 Man Utilities Team	O..... 1 EM.....21 Agg.....22	Same as EA.	
24	EC 2500 Man Utilities Team	O..... 2 EM.....32 Agg.....34	Compressor, Trk Mtd..... 1 Grader, Road, Mtz..... 1 Tilt Dozer 40 DBHP Diesel..... 1 Trk, ¼-ton..... 1 Trk, ¾-ton, Wpn Carr..... 2 Trk, 2½-ton, Dp..... 1	
25	ED 4000 Man Utilities Team	O..... 2 EM.....39 Agg.....41	Compressor, Trk Mtd..... 1 Grader, Road, Mtz..... 1 Tilt Dozer 90 DBHP Diesel..... 1 Trk, ¼-ton..... 1 Trk, ¾-ton, Wpn Carr..... 1 Trk, 2½-ton, cargo..... 1 Trk, 2½-ton, Dp..... 2	
26	EE 6000 Man Utilities Team	O..... 3 EM.....51 Agg.....54	Compressor, Trk Mtd..... 1 Grader, Road, Mtz..... 1 Tilt Dozer 90 DBHP Diesel..... 1 Welding Set No. 1 Elec Arc Tlr Mtd..... 1 Trk, ¼-ton..... 1 Trk, ¾-ton, Wpn Carr..... 1 Trk, 2½-ton, cargo..... 1 Trk, 2½-ton, Dp..... 2	Capacity of this team may be in- creased to 10,000 men by add of civ, PW or Sv Tr labor.

161. ENGINEER UNITS:

d. Engineer Service Organization, T/O & E 5-500:

(4) Utilities Teams (Continued):

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
27	EF 10,000 Man Utilities Team	O..... 5 EM..... 75 Agg..... 80	Compressors, Trk, Mtd..... 2 Graders, Road, Mtz..... 2 Tilt Dozers 90 DBHP Diesel..... 2 Trk, 1/4-ton..... 2 Trk, 3/4-ton, Wpn Carr..... 2 Trk, 2 1/2-ton, cargo..... 1 Trk, 2 1/2-ton, Dp..... 4	Capacity of this team may be increased by additional labor.

(5) Fire Fighting Teams:

28	FA Fire Fighting Hq	O..... 1 EM..... 2 Agg..... 3	Trk, 1/4-ton..... 1 Fire Fighting Equip Set No. 1..... 1	One fire fighting Hq, 1 fire Trk team FB, type 1 and 3 fire Trk teams type 1, will provide balanced fire fighting Pers and Equip for a base post, camp or Sta with a population of 50,000. One fire Trk team, type 1, will provide sufficient Pers and Equip for a 1000 bed hospital. One fire fighting Hq, 1 crash Trk team type 1, 1 fire Trk team type 1 and 1 crash Trk team type 1 will provide balanced fire fighting Pers and Equip for an AAF Inst of 1 Gp.
29	FB Fire Truck Team	EM..... 6	Trk, fire, pumper class 325, oversea type..... 1	
30	FC Crash Truck Team	EM..... 6	Trk, fire crash class 135..... 1	
31	FD Fire Trailer Team	EM..... 6	Trk, fire pumper 500 G.P.M. class 1000..... 1 Trk, 1 1/2-ton, cargo..... 1 Fire fighting equipment: Set No. 2..... 1 Set No. 3..... 1	
32	FE Crash Trailer Team	EM..... 5	Trk, fire crash, high pressure, CI 1020..... 1 Trk, 1 1/2-ton, cargo..... 1 Fire fighting equipment Set No. 2..... 1	
33	FF Water Tank Team	EM..... 1	Trk, 2 1/2-ton, water tank 700 gallon..... 1	May be added wherever insufficient water is available for immediate use for fire fighting. To permit independent Opn mess team type AE, must be Attached to each fire fighting unit.

161. ENGINEER UNITS:

d. Engineer Service Organization, T/O & E 5-500:

(6) Topographic Teams:

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
34	GA Map Depot Team	O..... 1 EM.....11 Agg.....12	Tlr, 1-ton, cargo..... 1 Trk, ¾-ton, Wpn Carr..... 1 Set No. 1 Map Distr Equip 1	Receives, stores and issues maps, adequate to provide map Dep facilities for 1 base Sec. Assigned as directed by theater.
35	GB Model Makers Team	O..... 1 O.....18 Agg.....19	Drafting Equip Set No. 2.... 1	Constructs scale models of terrain to assist in planning Opns. Normal attachemnt to topographic unit. Assigned as directed by theater.
36	SURVEY TEAMS GC	EM.....18	Tlr, 1-ton, cargo..... 1 Trk, ¾-ton, Wpn Carr..... 2 Trk, 2½-ton, cargo..... 1 Set No. 1 sketching Equip.. 1 Surveying Equip, Set No. 11 precise traverse..... 1 Set No. 12 Rcn..... 1	Composed of one topographic Surv party; capacity governed by terrain.
	GD	O..... 1 EM.....60 Agg.....61	Tlr, 1-ton, cargo..... 3 Trk, ¾-ton, Wpn Carr..... 6 Trk, 2½-ton, cargo..... 2 Set No. 1 Sketching Equip 3 Surveying Equip Set No. 1 1 precise traverse..... 3 Set No. 12 Rcn..... 1	Terrain, details required and climatic conditions govern capacity.
37	GE Survey Liaison Team	O..... 5 EM..... 9 Agg.....14	Trk, ¼-ton..... 1 Trk, ¾-ton, Wpn Carr..... 1 Set, No. 3 Regt..... 1	Normal assignment; 1 team per theater. Functions as liaison with Allied Armies on such matters as: (1) Exchange of maps, color pulls control etc. (2) Project planning (3) Items of Equip and Sup (4) Minor cartographic Sv for THQ.
38	GF Repro- duction Team	O..... 1 EM.....11 Agg.....12	Trk, 2½-ton, cargo..... 1 Set No. 5 Reproduction Equip, portable..... 1	Capable of reproducing printed or typed manuscript, photographs, etc. Cannot reproduce sketches, maps or aerial photos not previously prepared by photomapping Pers. May be assigned to Corps or similiar Hq for reproduction of documents, forms, etc., or may be used to increase capacity of the base topographic Sec.
39	GG Photo- mapping Team	O..... 2 EM.....78 Agg.....80	Instrument plotting Stereoscopic (multiplex) Set No. 1 control booth.. 2 Set No. 2 Drafting Unit..... 8 Set No. 3 Laboratory..... 1 Set No. 4 Plotting Booth.... 4 Set No. 5 Repair..... 1 Set No. 6 Supplementary.... 1	Equipped to perform original topographic mapping from aerial photographs; whould normally be attached to a topographic unit having planning, computing and reproduction facilities or it may be used to increase the capacity of the Base Topo Bn.

161. ENGINEER UNITS:

*d. Engineer Service Organization, T/O & E 5-500 (Continued) :**(7) Marine Teams:*

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
40	PORT REPAIR HA	SHIP TEAM O..... 7 EM.....58 WO..... 3 Agg.....68	Trk, ¼-ton..... 1 Trk, 2½-ton, cargo..... 1 Engineer Port Repair Ship Complete..... 1	Reciprocating steam engine type designed to assist in Har clearance and Rep work by previous Pers, and Equip for machine blacksmith and carpenter shops and the removal of Hv obstacles, or debris along side of approaches to wharves.
	HB	O..... 7 EM.....60 WO..... 3 Agg.....70	Trk, ¼-ton..... 1 Trk, 2½-ton, cargo..... 1 Engineer Port Repair Ship Complete..... 1	Direct Diesel Drive type. Functions similar to HA.
41	HC Floating Power Plant Team	O..... 4 EM.....55	Floating Power Plant..... 1 Set No. 1, Blacksmith Equipment 1 Set No. 1, Pipefitting Equipment.....1 Set No. 1, Rigging Equipment..... 1 Set No. 1, Sign Painting Equipment..... 1 Set No. 1, Tinsmith Equipment..... 1 Welding Equipment, Set No. 1 Electric Arc, 300 amp, Tlr Mtd (w/o welder, Elec arc)..... Set No. 2, Oxoacetylene..... 1	Operates a floating power plant for the production of electrical energy. Assigned as directed by WD or Theater. Can produce 30,000 kw at 13,000 volts.
42	DIVING TEAM HD	O..... 1 EM..... 7 Agg..... 8	Diving Outfit, Set No. 1 New Navy Type No. 1.... 1 Set No. 2, shallow water..... 2	Staffed and equipped to perform marine diving. Used on any Sit requiring diving Pers. Where team HD cannot furnish necessary Pers for diving Opns it may be augmented by a sufficient number of HE teams to accomplish its mission. Team may be used to augment Pers of standard units. Equip, tools and Mat other than basic diving gear, required for underwater work must be provided from Theater or CI IV stock.
	HE	EM..... 6	Diving Outfit, Set No. 1 New Navy Type No. 1.... 1 Set No. 2, shallow water..... 2	Similar to HD except that it has no officer or Surg Tech. In no instance will this team be used to augment diving Pers of standard units. Equip, tools and Mats other than basic gear, required for underwater work must be provided from Theater or Class IV stock.

■ 162. MEDICAL DEPARTMENT UNITS:

a. Air Force Units:

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
2	Med Air Evac Sq T/O & E 8-447 (19 Jul 44, C1)	O..... 6 N.....25 EM.....56 Agg.....87	Tlr, ¼-ton, 2-wheel, cargo...7 Tlr, 1-ton, 2-wheel, water tank, 250-gal.....1 Tlr, 1-ton, 2-wheel, cargo...1 Trk, ¼-ton.....9 Trk, ¾-ton, Wpn Carr.....1	Furnishes Med Dept Pers to Tr Carr and air Trans units utilized in the Evac of sick and wounded, so as to provide Med care, nursing and treatment of casualties during flight. May be assigned or Atchd to: ATC, Tr Carr Comd, an AF, an ATC Wg, an Air Spt Comd or Tr Carr Wg of an AF, A Tr Carr Gp, and occasionally to an Air Sv Comd of an AF. Consists of Hq Sq, Hq and Sup Sec; 4 Evac Flights (each with a classification Sec and 6 Air Trans Teams). Functions with Evac Hosp, Field Hosp, Gen Hosp, Embkn Pts and Reception Centers for casualties located accessible to Adrms.
			Remarks—(Continued) Wt (short tons): on wheels, 29; boxed, 35. Cubage (ship tons): on wheels, 155; boxed, 112.	
3	Med Disp, Avn T/O & E 8-450 (4 Dec 44)	O..... 4 EM.....24 Agg.....28	Tlr, 1-ton, cargo.....1 Tlr, 1-ton, Tk 250 Gal.....1 Trk, ¼-ton.....4 Trk, ¾-ton, Wpn Carr, w/winch.....1 Trk, 2½-ton, dental operating.....1	Maintains a 36 bed dispensary. Furnishes Med care, with the exception of full hospitalization, for Army AF bases and Orgns which are not provided with or have inadequate Med facilities. T/O & E 8-450 RS provides a 24-bed unit. 24-bed capacity also provided for in T/O, expandable to 36 beds in emergency.
			Wt (short tons): on wheels, 27; boxed, 29. Cubage (ship tons): on wheels, 147; boxed, 125.	
4	Med Sup Plat (Avn) T/O & E 8-497 (31 Dec 44)	O..... 2 EM.....17 Agg.....19	Trk, ¼-ton.....1 Trk, ¾-ton, Wpn Carr.....1 Trk, 1½-ton, cargo, w/w.....1	Procures, stores and issues Med Sup to Med units of AF served by Air Dep Gp, to which it is normally Atchd.
			Cubage (ship tons): on wheels, 48; boxed, 37.	Wt (short tons): on wheels, 9; boxed, 11.
5	Vet Det Avn T/O & E 8-487 (25 Nov 43)	O.....1 EM.....3 Agg.....4	Trk, ¾-ton, Comd.....1	A flexible Mbl Orgn designed to inspect all subsistence of Anl origin or sources of such foods for an AF in the field. Basic unit sufficient for 25,000 Pers and 1 officer and 2 soldiers for each additional 25,000.
			Remarks—(Continued) Wt (short tons): on wheels, 3; boxed, 4. Cubage (ship tons): on wheels, 12; boxed, 9.	

¹ The floor space requirements given refer to buildings constructed for hospital purposes. For converted buildings, such as hotels, the floor space requirements are approximately four times that required in buildings constructed for use as hospitals.

162. MEDICAL DEPARTMENT UNITS:

*b. Combat Support Units:**(1) Organic Units:*

1	1 <i>Unit</i>	2 <i>Personnel</i>	3 <i>Vehicles</i>	4 <i>Remarks</i>
2	Abn Med Co T/O 8-37T (16 Dec 44)	O..... 27 EM.....273 Agg.....300	See Par 113b.	1 per Abn Div., 1 Plat to each RCT for Coll, Evac and treatment of casualties.
3	Armd Med Bn T/O & E 8-75 (21 Nov 44)	O..... 33 WO..... 2 EM.....365 Agg.....400	See Par 117.	1 per Armd Div. Each Med Co has Co Hq, Coll Plat and Clr Plat for 2d Ech Med Sv. Wt (short tons): on wheels, 339; boxed, 395. Cubage (ship tons): on wheels, 1,951; boxed, 1,509.
4	Med Bn T/O & E 8-15 (14 Feb 45)	O..... 35 WO..... 2 EM.....407 Agg.....444	See Par 122. <i>Remarks—(Continued)</i> Wt (short tons): on wheels, 281; boxed, 331. Cubage (ship tons): on wheels, 1,614 boxed, 1,215.	1 per Inf Div. Hq & Hq Det, 3 Coll Cos, 1 Clr Co. Provides 2d Ech Med Sv and Evac for Div. Can move all Equip with organic Trans but not Pers unless all Ambbs are used for such Trans plus 6 additional 2½-ton cargo Trks.
5	Med Bn, Engr Sp Brig T/O & E 8-195S (21 Oct 44)	WO..... 1 O..... 30 EM.....384 Agg.....415	Tlr, 1-ton, (250 gal) water tank..... 7 Trk, ¼-ton.....33 Trk, ¾-ton, Wpn Carr..... 1 Trk, 1½-ton, cargo..... 4 Trk, 2½-ton, cargo.....14 Trk, 2½-ton, cargo, w/w.... 4 <i>Remarks—(Continued)</i> Cubage (ship tons): boxed, 1,204; set up, 1,594.	1 per Engr Sp Brig. Consists of Hq and Hq Det and 3 Med Cos. Each Med Co has a Coll and Clr Plat. Provides Med Spt initially in landing Opns in immediate Vic of beachheads and will provide Med coverage in small boats. Evac to ships or base shore. Wt (short tons): boxed, 327; set up, 277. Cubage (cu ft): boxed, 48,161; set up, 63,766.

(2) Administrative Units:

6	Hq & Hq Det, Med Gp T/O & E 8-22 (5 Mar 45)	O.....11 EM.....26 Agg.....37	Tlr, ¼-ton.....1 Tlr, 1-ton.....1 Trk, ¼-ton.....5 Trk, ¾-ton, Wpn Carr.....1 Trk, 2½-ton, cargo.....1 <i>Remarks—(Continued)</i> Wt (short tons): on wheels, 1,574; boxed, 1,731. Cubage (ship tons): on wheels, 8,791; boxed, 5,396.	THQ Res unit for attachment in numbers required to Armies, Corps, or separate task forces. Consists of Comd, Exec, and Comm Sec, Opns and Tug Sec and Hq Det. Is a flexible Organizing Tac (Comd) control over 6 to 8 basic Med units, which units may be Sep Cos, Bns, Mbl Hosp or similar units.
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162. MEDICAL DEPARTMENT UNITS:

b. Combat Support Units:

(2) Administrative Units (Continued):

1	2	3	4
Unit	Personnel	Vehicles	Remarks
7 Hq & Hq Det, Med Bn (Sep) T/O & E 8-26 (20 May 43, C1)	O..... 6 WO..... 1 EM..... 21 Agg..... 28	Tlr, 1-ton, cargo..... 2 Trk, 1/4-ton..... 3 Trk, 2 1/2-ton, cargo..... 2 Trk, 2 1/2-ton, w/w..... 1 <i>Remarks—(Continued)</i> Wt (short tons): on wheels, 23; boxed, 27. Cubage (ship tons): on wheels, 127; boxed, 87.	THQ Res Unit. Normally Atchd to Army and Corps. May be Atchd to a Med Gp or operate separately. Consists of Comd and Exec Sec, Opns and Tng Sec, Sup and Maint Sec and Hq Det. Is a Tac and Adm Hq to which may be Atchd three (3) to six (6) Sep Cos, number and type of these units depend upon assigned mission.

(3) Collection and Evacuation Units:

8 Med Coll Co (Sep) T/O & E 8-27 (23 May 43, C1, 2, 3)	O..... 5 EM..... 95 Agg..... 100	Tlr, 1/4-ton..... 2 Tlr, 1-ton, Tk, (250 gal)..... 1 Amb, 3/4-ton..... 10 Trk, 1/4-ton..... 2 Trk, 3/4-ton, Wpns Carr..... 4 Trk, 2 1/2-ton, cargo, w/w..... 1 <i>Remarks—(Continued)</i> Wt (short tons): on wheels, 55; boxed, 66. Cubage (ship tons): on wheels, 323; boxed, 251.	Designed for attachment to Hq and Hq Det, Med Gp, or Hq and Hq Det, Med Bn (Sep). To Army or Corps as necessary to meet varying conditions. Unit consists of Co Hq and 3 Plats (Sta Plat, Litter Plat and Amb Plat). Provides or augments facilities for care and Evac of Div, Corps or Army Trs. Unit has capacity to Evac casualties from Approx 3,500 Div Trs. Basis of assignment to task forces: 1 per Div.
9 Med Amb Co, Mtr (Sep) T/O & E 8-317 (5 Dec 44)	O..... 4 EM..... 85 Agg..... 89	Tlr, 1-ton..... 1 Trk, 1/4-ton..... 4 Trk, 3/4-ton, Wpn Carr..... 1 Trk, 3/4-ton, Amb, KD..... 30 Trk, 2 1/2-ton, cargo..... 1 <i>Remarks—(Continued)</i> Wt (short tons): on wheels, 111; boxed, 137. Cubage (ship tons): on wheels, 707; boxed, 577.	Designed for attachment to Hq and Hq Det, Med Gp, or Hq and Hq Det, Med Bn, Sep. To Army or Corps as necessary to meet varying conditions. Consists of Co Hq and 3 Plats. Has adequate facilities to Evac casualties from 15,000 Tr. Assigned to task forces on basis of 1 per Div.
10 Med Clr Co (Sep) T/O & E 8-28 (4 Sep 44)	O..... 13 EM..... 99 Agg..... 112	Tlr, 1/4-ton..... 1 Tlr, 1-ton, cargo..... 6 Tlr, 1-ton, Tk, (250 gal)..... 2 Trk, 1/4-ton..... 3 Trk, 3/4-ton, Wpns Carr..... 1 Trk, 1 1/2-ton, cargo..... 2 Trk, 2 1/2-ton, cargo..... 4 Trk, 2 1/2-ton, cargo, w/w..... 2	Designed for attachment to Hq and Hq Det, Med Gp or Hq and Hq Det, Med Bn (Sep). To Army or Corps as necessary to meet varying conditions. Unit consists of Co Hq and 2 Clr Plats. Assigned to task forces on the basis of 1 per Div; supports Div Coll and Clr Cos. Has facilities to clear approximately 15,000 Army, Corps or Div Trs. Wt (short tons): on wheels, 68; boxed, 78. Cubage (ship tons): on wheels, 370; boxed, 260.

162. MEDICAL DEPARTMENT UNITS:

b. Combat Support Units (Continued):

(4) Hospitals:

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
11	Evac Hosp (750 Beds) T/O 8-580 (31 Jan 45)	O..... 47 N..... 53 D..... 1 WO..... 1 EM..... 303 Agg..... 405	Tlr, 1-ton, Tk, (250 gal)..... 2 Tlr, 1-ton..... 2 Trk, 1/4-ton..... 3 Trk, 3/4-ton, Wpn Carr..... 3 Trk, 2 1/2-ton, cargo..... 4 Trk, 2 1/2-ton (water tank 700 Gal)..... 1 Disinfector, Tlr type..... 1 Tlr, 1/4-ton..... 2 <i>Remarks—(Continued)</i> Wt (short tons): on wheels, 145; boxed, 153. Cubage (ship tons): on wheels, 527; boxed, 440.	1 per 3 Divs. May be Atchd to Hq and Hq Det, Med Gp. Receives all CIs of cases and prepares them for further Evac. May be used for definitive hospitalization in emergency. Is set up in Army Sv Area in as close support as tactical situation permits. Should be located at a distance from enemy air objectives, and on a good road net from front to rear. Sewage facilities are desirable. Minimum space requirements: Under tents: 200 x 200 yards. In buildings: 80,000 sq ft. Requires 4 to 6 hours to establish and 8 to 10 hours to dismantle, when empty of patients. Normally moved by Army Mtr convoy; may be moved by rail. Movement requires 3/8 train, type A or 184 truck tons for Equip only.
12	Evac Hosp, Sem (400 Beds) T/O & E 8-581 (25 Mar 44, C1)	O..... 38 N..... 40 WO..... 1 EM..... 207 Agg..... 286	Tlr, 1/4-ton..... 1 Tlr, tank (250 Gal)..... 2 Tlr, 1-ton, cargo..... 18 Trk, 1/4-ton..... 3 Trk, 3/4-ton, Wpns Carr..... 2 Trk, 2 1/2-ton, cargo..... 20 Trk, water tank (700 Gal)..... 1 Disinfector, portable..... 1 <i>Remarks—(Continued)</i> Wt (short tons): on wheels, 216; boxed, 238. Cubage (ship tons): on wheels, 1,057; boxed, 760.	1 per Div. May be Atchd to Hq and Hq Det, Med Gp. Receives all CIs of cases and prepares them for further Evac. May be used for definitive hospitalization in an emergency. Equip can be moved by organic Trans. Pers by shuttling. Is established in Army Sv, Corps area, or in as close Spt of Div as Tac Sit permits. Should not be established near enemy air objectives. Minimum space requirements under tentage 150 x 150 yards.
13	Conv Hosp T/O 8-590 (1 Apr 42, C1, 2, 3)	O..... 31 EM..... 184 Agg..... 215	Trk, 1/4-ton..... 3 Trk, 3/4-ton, Amb, KD..... 4 Trk, 3/4-ton, Wpns Carr..... 9 Trk, 2 1/2-ton, cargo..... 2 <i>Remarks—(Continued)</i> Wt (short tons): on wheels, 215; boxed, 226. Cubage (ship tons): on wheels, 720; boxed, 633.	1 per 150,000 ground Trs. Receives convalescents from Evac Hosp. Capacity 3000 patients normally: 5000 for not to exceed one week. Is set up in rear of Army area on roads or Rys, preferably near army repl pool. Sewage facilities desirable. Minimum space requirements: Under tents: 540 x 300 yards. In buildings: 120,000 sq ft. ¹ Movement requires 1/2 train, type A. "A," 216.00; "B," 228.00; "C," 725.00; "D," 638.00. ¹

162. MEDICAL DEPARTMENT UNITS:

b. Combat Support Units:

(4) *Hospitals (Continued):*

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
14	Portable Surg Hosp (25 Beds) T/O & E 8-572 (14 Dec 44)	O..... 4 EM.....33 Agg..... 37	Tlr, 1-ton.....1 Trk, 1/4-ton.....1 Trk, 3/4-ton, Wpns Car.....2 <i>Remarks—(Continued)</i> Wt (short tons): on wheels, 15; boxed, 17. Cubage (ship tons): on wheels, 66; boxed, 44.	3-9 per Inf Div. A Mbl Surg unit for use in difficult terrain where wheeled Trans is impracticable. Of great value in jungle, may be rapidly established, closed, and moved by hand-carry, patients by litter, using native bearers to help in Mvmt. Total Wt about 1000 lbs in waterproof containers (30 lbs per man). Operates well Fwd—Vic of Coll or Clr Stas.
15	Field Hosp T/O & E 8-510 (31 Aug 44, C1, 2)	O..... 22 N..... 18 EM.....182 Agg.....222	Tlr, 1/4-ton.....4 Tlr, water tank (250 Gal)....3 Tlr, 1-ton, cargo.....1 Trk, 1/4-ton.....5 Trk, 3/4-ton, Amb.....6 Trk, 3/4-ton, Wpn Carr.....1 Trk, 2 1/2-ton, cargo.....3 Trk, 2 1/2-ton, cargo, w/w.....1 Bath unit, field, Mbl.....1 <i>Remarks—(Continued)</i> Wt (short tons): on wheels, 130; boxed, 141. Cubage (ship tons): on wheels, 587; boxed, 499.	A Theater unit. Consists of Hq and 3 Units. Each unit may act independently and is capable of caring for 100 patients. May be Trans by air (less Veh). Used to cover ABs, island garrisons or Secs of of the Com Z when fixed bed facilities are not present and Cons not feasible. Should be considered as Mbl type of Sta Hosp. Of great value under jungle conditions where it may serve at a landing field as a small Evac Hosp, plus surgical teams.

162. MEDICAL DEPARTMENT UNITS:

*b. Combat Support Units (Continued):**(5) Veterinary Units:*

1	2	3	4
Unit	Personnel	Vehicles	Remarks
16 Vet Co (Sep) T/O & E 8-99 (25 Nov 44)	O..... 5 EM.....59 Agg.....64	Semi-Tlr, 6-ton, Anl or cargo.....3 Trk, Trac, 4- to 5-ton.....3 Trk, ¾-ton, Wpn Carr.....1 <i>Remarks—(Continued)</i> Wt (short tons): on wheels, 38; boxed, 43. Cubage (ship tons): on wheels, 260; boxed, 220.	THQ Res Unit. May be Atchd to Hq and Hq Det Med Gp. Consists of a Co Hq, three (3) Coll and Treat Plats and a Mtr Evac Sec. Evacs Anl casualties to Vet Hosps from Div, Corps and Army Vet Aid Stas and Vet Clr Stas. Each semi-Tlr has capacity for 8 horses, one Plat capable of supporting a RCT. Basis of assignment: 2 per Cav Div, 1 per 2,000 Anls, 1 per 6 Sep QM Pk Trs, and 1 per 6 Sep FA Pk Bns.
17 Vet Evac Hosp T/O 8-780 (1 Apr 42, C1, 2)	O..... 6 EM.....84 Agg.....90	Tlr, 1-ton, cargo.....1 Tlr, 1-ton, tank (250 Gal)....1 Trk, ¼-ton.....1 Trk, ¾-ton, Comd.....1 Trk, 1½-ton, cargo.....3 <i>Remarks—(Continued)</i> Wt (short tons): on wheels, 25; boxed, 30. Cubage (ship tons): on wheels, 132; boxed, 105.	A Theater Unit. Capacity: 150 Anls normally; 300 in an emergency. Establishes within 1 day's march for Anl casualties from Vet Aid and Clr Sta, preferably on or near a Ry to the rear. Minimum space requirements: Under tents, 125 x 100 yds. Usually Mvs by rail. Mvmt requires ¼ train, type A or 9 Trk tons for Equip only.
18 Vet Conv Hosp T/O & E 8-790 (30 Aug 43, C1)	O..... 6 EM.....151 Agg.....157	Tlr, 1-ton, cargo.....3 Trk, ¼-ton.....2 Trk, ¾-ton, Wpns Carr.....1 Trk, 1½-ton, cargo.....2 Trk, 2½-ton, cargo.....3	A Theater Unit. Receives convalescents from Vet Evac Hosp. Capacity: 500 Anls normally; 1,000 in an emergency. Mvmt requires ½ train, type A, or 24 Trk tons for Equip only. Wt (short tons): on wheels, 53; boxed, 59. Cubage (ship tons): on wheels, 154; boxed, 133.

162. MEDICAL DEPARTMENT UNITS:

b. Combat Support Units (Continued) :

(6) Miscellaneous Units:

1	1	3	3	4
	Unit	Personnel	Vehicles	Remarks
19	Med Sn Co T/O & E 8-117 (13 May 44, C1, 2)	O..... 3 EM.....109 Agg.....112	Trk, 1/4-ton.....1 Trk, 3/4-ton, Wpn Carr..... 4 Trk, 2 1/2-ton, cargo..... 2 Trk, 2 1/2-ton, Dp.....2	Theater Unit. Consists of Co Hq and 2 identical Plats. Co may be employed as directed by the malariaologists in conjunction with anti-malaria control work. Assists large Hosp units. Wt (short tons): on wheels, 38; boxed, 43. Cubage (ship tons): on wheels, 183; boxed, 113.
20	Med Dep Co T/O & E 8-667 (1 Dec 44)	O..... 12 WO..... 1 EM.....120 Agg.....133	Tlr, 1-ton.....7 Trk, 1/4-ton.....3 Trk, 3/4-ton, Wpn Carr.....2 Trk, 2 1/2-ton, cargo.....5 Trk, 2 1/2-ton, Dent Lab.....2 <i>Remarks—(Continued)</i> Wt (short tons): on wheels, 53; boxed, 61. Cubage (ship tons): on wheels, 294; boxed, 189.	1 per 125,000 Trs in CZ. Receives stores and issues Med Sup; performs 3d and 4th Ech Maint of Med Dept Equip; replaces and Rep dental prosthetic appliances. Mbl unit consisting of Dep Hq, Maint Plat and 3 storage and issue Plats, which operates. Dep proper and two Fwd Sps which which may include dental posthetic Rep teams. Unit ordinarily Mvs by rail and is established in the Army Sv Area. Must be located centrally with reference to road net and accessible to Mtr Veh from Div Corps and Army units.
21	Med Gas Treatment Bn T/O & E 8-125 (22 Feb 45, C1)	O..... 45 EM.....411 Agg.....456	Tlr, 1/4-ton..... 1 Tlr, 1-ton, Tk (250 Gal).....16 Tlr, 1-ton.....16 Trk, 1/4-ton.....12 Trk, 3/4-ton, Wpn Carr..... 6 Trk, 2 1/2-ton, cargo.....37 Trk, 2 1/2-ton, cargo, w/w..... 1 Bath unit, field, Mbl..... 6 • <i>Remarks—(Continued)</i> Wt (Vehs only—short tons): on wheels, 251; boxed, 298. Cubage (Vehs only—ship tons): on wheels, 1,457; boxed, 1,015.	Designed to provide emergency treatment for units undergoing concentrated gas attacks. Normally functions in Div Area and is provided on call by Army. Unit consists of a Hq & Hq. Det and 3 Clr Cos. Definite capacity is not known but it is believed 1 Co can handle normally gas casualties of 1 Div. When use of gas by the enemy appears imminent, Army Comds may attach available Sig Trs to establish a radio net for the warning and control of the Med Gas Treatment Bns and their components.

162. MEDICAL DEPARTMENT UNITS:

c. Service Force Units:(1) *Supply and Maintenance Unit:*

1	1 Unit	2 Personnel	3 Vehicles	4 Remarks
2	Med Base Dep Co T/O & E 8-187 (29 Jan 44, C1, 2, 3)	O..... 3 WO..... 1 EM..... 40 Agg..... 44	Tlr, ¼-ton, cargo..... 3 Trk, ¼-ton..... 1 Trk, ¾-ton, Wpn Carr..... 1 <i>Remarks—(Continued)</i> Wt (short tons): on wheels, 10; boxed, 12. Cubage (ship tons): on wheels, 44; boxed, 33.	1 Co assigned to a Med Sec, Gen Dep, or a branch Med Dep when requirements do not exceed 100,- 000 Trs. Additional Cos may be assigned as increased require- ments warrant. Unit designed to operate as a component of a Med branch Dep or of the Med Sec of a base Gen Dep. Labor will be furnished by the QM labor pool and Trans by the QM Trans pool. May be supplemented by Sup and Maint, T/O & E 8-500.

(2) *Hospitals and Centers:*

3	Gen Hosp (1,000 Beds) T/O & E 8-550 (3 Jul 44, C1, 2, 3, 4)	O..... 55 N..... 83 WO..... 1 EM..... 450 Agg..... 594 HD..... 3 PT..... 2	Tlr, ¼-ton, cargo..... 4 Tlr, 1-ton, cargo..... 2 Tlr, 1-ton (250-gal) Tk..... 2 Trk, ¼-ton..... 6 Trk, ¾-ton, Wpn Carr..... 1 Trk, 1½-ton, cargo..... 4 Trk, 2½-ton, cargo..... 2 Trk, 2½-ton, Dp, w/w..... 1 Trk, ¾-ton, Amb, KD..... 6 <i>Remarks—(Continued)</i> Wt (short tons): on wheels, 304; boxed, 318. Cubage (ship tons): on wheels, 1,200; boxed, 1,089.	The number of Gen Hosps in the Com Z or the ZI depends on expected demand and policy of Evac from T of Opns to ZI. Receives patients from Evac Hosps of the CZ, and from other Hosps in Com Z. Provides definitive hospitalization for all CI cases. Located on Ry or water- way. In Com Z or the ZI, a number of Gen Hosp may be grouped to form a Hosp Cen. Gen Hosp is not Mbl Units may be expanded by direction of Theater Comdr. 1,500 and 2,000 bed capacity. Units also pro- vided for in T/O. Minimum floor space requirements for unit shown: 120,000 sq ft. Requires 17 freight cars to move. Addi- tional Svs: Ldry, Fin, MP, Postal, Sig, etc., will be provided as for Hosp Centers. Gen Hosp (NP), T/O 8-550S provides a 1,000 bed unit especially staffed and equip- ped to care for neuropsychiatric patients.
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162. MEDICAL DEPARTMENT UNITS:

c. Service Force Units:

(2) Hospitals and Centers (Continued):

1	2	3	4
Unit	Personnel	Vehicles	Remarks
4 Sta Hosp (25 to 900 beds) T/O 8-560 (28 Oct 44, C1, 2, 3, 4)	250 Bed: O..... 20 N..... 21 EM.....138 Agg.....179 500 Bed: O..... 32 N..... 42 Dietn... 2 PT..... 1 EM.....253 Agg.....330	Trk, 1/4-ton.....2 Trk, 3/4-ton, Amb.....2 Trk, 3/4-ton, Wpn Carr.....2 Trk, 2 1/2-ton, cargo.....2 Tlr, 1/4-ton.....1 Tlr, 1-ton, tank, 250 gal.....1 Tlr, 1/4-ton.....1 Tlr, 1-ton, 250-gal water tank.....1 Trk, 1/4-ton.....2 Trk, 3/4-ton, Amb.....4 Trk, 3/4-ton, Wpns Carr.....3 Trk, 2 1/2-ton, cargo.....2 Trk, 2 1/2-ton, Dp.....1	250 and 500 bed Sta Hosps are shown here, but Hosps range from 25 to 900 beds. Sta Hosps are assigned in Com Z to provide hospitalization for Tr in the Com Z. Not Mbl. 250 Bed: Wt (short tons): on wheels, 94; boxed, 99. Cubage (ship tons): on wheels, 364; boxed, 329. 500 Bed: Wt (short tons): on wheels, 130; boxed, 143. Cubage (ship tons): on wheels, 576; boxed, 511.
5 Conv Cen T/O & E 8-591T (12 Jun 44, C1)	O..... 59 EM.....329 WO..... 1 N..... 4 Agg.....393	Tlr, 1/4-ton.....6 Tlr, 1-ton.....4 Tlr, 1-ton, Tk (250 Gal).....6 Trk, 1/4-ton.....8 Trk, 3/4-ton, Amb, KD.....2 Trk, 3/4-ton, Wpns Carr.....2 Trk, 1 1/2-ton, cargo.....6 Trk, 2 1/2-ton, cargo, w/w.....3	Receives from Hosps within T of Opns ambulatory patients need- ing no further Hosp treatment but requiring further recondi- tioning under Med supervision prior to return to duty status. Assigned as required in Com Z. Wt (short tons): on wheels, 375; boxed, 392. Cubage (ship tons): on wheels, 1,376; boxed, 1,225.
6 Conv Camp T/O & E 8-595T (12 Jun 44)	O..... 27 EM.....143 Agg.....170	Tlr, 1/4-ton.....4 Tlr, 1-ton.....2 Tlr, 1-ton, Tk (250 Gal).....2 Trk, 1/4-ton.....3 Trk, 3/4-ton, Amb, KD.....1 Trk, 3/4-ton, Wpns Carr.....1 Trk, 1 1/2-ton, cargo.....4 Trk, 2 1/2-ton, cargo, w/w.....2	Receives from Hosps within T of Opns ambulatory patients need- ing no further Hosp treatment but requiring further recondi- tioning under Med supervision prior to return to duty status. Assigned as required in Com Z. Wt (short tons): on wheels, 141; boxed, 149. Cubage (ship tons): on wheels, 566; boxed, 470.

162. MEDICAL DEPARTMENT UNITS:

c. Service Force Units (Continued) :(3) *Veterinary Units:*

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
7	Vet Co (Sep) T/O & E 8-99 (23 Nov 44)	See Par 162 b, line 16.		
8	Vet Gen Hosp T/O & E 8-750 (14 May 43, C1, 2, 3)	O..... 10 EM..... 243 Agg..... 253	Tlr, 1-ton, tank (250 Gal).... 1 Semi-Tlr, 6-ton, Anl & cargo..... 1 Trk, 1½-ton, cargo..... 2 Trk 2½-ton, cargo, w/w..... 2 Trk, ¼-ton..... 1 Trk, ¾-ton, Comd..... 1 Trk, ¾-ton, Wpn Carr..... 1 Trk, Trac, 4-, 5-ton..... 1 Wagon, escort..... 2	A Theater Unit. Receives patients from the Com Z or from other Vet Hosp. Capacity: 500 Anls normally; 1900 in an emergency. Located in the Com Z or ZI only. Not Mbl. Wt (short tons): on wheels, 63; boxed, 70. Cubage (ship tons): on wheels, 318; boxed, 259.
8	Vet Conv Hosp T/O & E 8-790	See Par 162 b, line 18.		
9	Vet Sta Hosp T/O 8-760 (20 Jul 42, C1)	O..... 6 EM..... 80 Agg..... 86	Tlr, 2-horse van..... 1 Trk, ¼-ton..... 1 Trk, 1½-ton, cargo..... 1 Trk, 2½-ton, cargo..... 1 Wagon, escort..... 2	A Theater unit. Renders Vet care to sick or wounded Anls. Does not receive patients from CZ. Established in the Com Z when justified by the number of Anls in the area. Capacity of units shown hereon—300 patients. 150 patient unit also provided for in T/O. Average area required for installations under tents, 125 x 125 yds. Wt (short tons): on wheels, 24; boxed, 28. Cubage (ship tons): on wheels, 134; boxed, 109.

162. MEDICAL DEPARTMENT UNITS:

c. Service Force Units (Continued):

(4) Train and Ship Units:

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
10.	Hosp Tn T/O & E 8-520 (12 Feb 44, C1, 2)	O..... 4 N..... 6 EM.....39 Agg.....49	None. ----- <i>Remarks—(Continued)</i> Wt (short tons): boxed, 16. Cubage (ship tons): boxed, 74.	THQ Unit. Requirements based on length of haul and expected casualties. Normally, 1 per. Div or Corps may be required in T of Opns. Evacs casualties from Evac Hosps, to Gen Hosps, to the ZI; and Evacs casualties within the ZI. Within the T of Opns, the Med Dept is charged with care and treatment of patients Trans and Gen Adm co-incident thereto. Mvmt into and out of Com Z is controlled by the Regulating Officer, under direction of Theater. Classification: (1) Type train; 22 cars, 20-ton box type, super-structure altered to meet MD requirements; average capacity 300 patients. (2) Im-provised; 1 Hosp unit car, 1 baggage car and a variable number of pullman, tourist sleeper, or chair cars, depending on availability; Av capacity, . 500 patients.
11	Hosp Ship Comple- ment T/O & E 8-537 (3 Mar 45)	O..... 14 N..... 33 WO..... 1 EM.....130 Agg.....179 Dietn ... 1	None. ----- <i>Remarks—(Continued)</i> Wt and cubage cannot be esti-mated as size of unit varies.	1 per Hosp ship. May be employed in support of landing Opns and for Evac of overseas T of Opns. Ship is registered with Interna-tional Red Cross for protection and is permitted to Trans only patients, Med Sup and Med Pers. Pers varies with bed capacity, i. e. 200-1,000. This strength for 500 cases.
12	Med Hosp Ship Plat Sep T/O & E 8-534 (21 Oct 43, C1, 2, 3)	O..... 4 EM.....28 Agg.....32	None. ----- <i>Remarks—(Continued)</i> Wt and cubage cannot be esti-mated as size of unit varies.	Teams of variable composition ac-cording to number of patients (25 to 500) to be transported. 250 patient team shown hereon. Pro-vides professional care for sick and wounded transported from T of Opns to ZI on transports or cargo vessels. Nurses not normal-ly Atchd. Overseas Comdr origin-ating Evac will furnish nurses when required.

162. MEDICAL DEPARTMENT UNITS :
 b. Combat Support Units (Continued) :
 (5) *Evacuation Units:*

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
13	Med Hold- ing Bn T/O & E 8-55 (30 Mar 45)	O..... 28 WO..... 1 EM..... 414 Agg..... 443	Tlr, ¼-ton..... 5 Tlr, 1-ton..... 1 Tlr, 1-ton, 250-gal water tank..... 2 Tlr, laundry, Mbl..... 1 Trk, ¼-ton..... 5 Trk, ¾-ton, Amb..... 40 Trk, ¾-ton, Wpns Carr..... 1 Trk, 1½-ton cargo..... 2 Trk, 2½-ton, cargo..... 5	Evac all CIs of patients from Evac Hosp to Rhds and Adrms and provides care while waiting. As- signed 1 per Army, to Adv Sec, Com Z.

162. MEDICAL DEPARTMENT UNITS:

d. Medical Service Organization, T/O & E 8-500: This is a cellular organization, providing specialized teams of various sizes, functions and capacities, for use where standard organizations are too large or cannot meet a particular medical need of the theater. Teams may operate independently, may be combined to form composite platoons, companies or battalions, or may be attached to a standard medical unit.

Designation: †----- Med †----- *-----
† Insert number of unit Hq †----- Med †----- *-----
 Hq Co (Det), †-----
 Med †----- *-----
† Insert main function
* Insert type of unit
 "Bn," "Cen," †----- Med †----- Co
 "Gp," "Det," †----- Med †----- Plat
 †----- Med †-----

(1) Administration:

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
2	HEADQUARTERS TEAMS:			
	AA	O.....1		For Contl of 2 or more teams of not less than 40, as a component of a large Orgn, to which no officer has been assigned.
	Plat Hq	EM.....1		
	(Component)	Agg.....2		
	AB	O.....1	Trk, ¾-ton, Wpns Carr.....1	For control of 1 or more Sep teams, aggregating 40 men.
	Plat Hq	EM.....4		
	(Sep)	Agg.....5		
	AC	O.....2	Tlr, ¼-ton.....1 Tlr, 1-ton.....1 Trk, ¼-ton.....1 Trk, ¾-ton, Wpns Carr.....1 Trk, 1½-ton, cargo.....1	2 or more Plats total Str not less than 100 men.
	Co Hq	EM.....8		
		Agg.....10		
	AD	O.....4		
	Bn Hq	EM.....12		
		Agg.....16	Trk, ¾-ton, Wpns Carr.....1	3 to 6 Cos.
	AE	O.....5	Trk, ¼-ton.....1 Trk, ¾-ton, Wpns Car.....1 Trk, 2½-ton, cargo.....1	1 per theater.
	Hq Concentration Cen	EM.....14		
		Agg.....19		
	AF	O.....7	Trk, ¾-ton, Wpns Carr.....2 Trk, 1½-ton, cargo.....1	For Contl of 2 or more Gen Hosps.
	Hq, Hosp	EM.....22		
	Cen	WO.....1		
		N.....1		
		Agg.....31		
	AG	O.....4	Trk, ¾-ton, Wpns Carr.....2	For Contl of 24 or more Professional Sv Teams.
	Hq, Professional Sv	EM.....12		
		Agg.....16		

162. MEDICAL DEPARTMENT UNITS:

d. Medical Service Organization, T/O & E 8-500:(1) *Administration (Continued):*

1	2	3	3	4
	Unit	Personnel	Vehicles	Remarks
3	MESS DETACHMENTS:			
	AH	EM..... 4		40 to 100 Individuals.
	AI	EM..... 6		101 to 175 individuals.
	AJ	EM..... 8		176 to 225 individuals.
	AK	EM..... 9		226 to 275 individuals.
	AL	EM.....11		276 to 325 individuals.
4	SERVICE DETACHMENTS:			
	AM	EM.....4		AM & AN Maint major items of
	AN	EM.....6		Equip improvise others.
5	AUTO- MAINTENANCE DETACHMENTS:			
	AO	EM.....1	Trk, ¾-ton, Wpns Carr.....1	AO & AP 2d Ech Maint, 1 Mech
	AP	EM.....2		per 15 Vehs.
6	AQ Hq PROPHYLACTIC PLATOON:			
		O.....1	Trk, ¼-ton.....1	For Contl of 4 to 6 venereal pro-
		EM.....3	Trk, ¾-ton, Wpns Carr.....1	phylactic teams.
		Agg.....4		
7	AR Hq VET ANL Sv:			
		O.....1	Trk, ¼-ton.....1	For Contl of 3 or more Vet teams.
		EM.....3		
		Agg.....3		

(2) *Supply and Maintenance Teams:*

8	SUPPLY DETACHMENTS:			
	BA	EM.....9	Tlr, ¼-ton.....1 Trk, ¾-ton, Wpns Carr.....1	Handles Sups up to 7,500 Trs.
	EB	O.....1 EM.....13 Agg.....14	Tlr, ¼-ton.....1 Trk, ¾-ton, Wpns Carr.....1	Handles Sups of 7,500 to 15,000 Trs.
	BC	O.....1 EM.....19 Agg.....20	Tlr, ¼-ton.....1 Tlr, 1-ton.....1 Trk, ¾-ton, Wpns Carr.....1 Trk, 1½-ton, cargo.....1	Handles Sups of 15,000 to 25,000 Trs.
	BD	O.....1 EM.....21 Agg.....22	Tlr, ¼-ton.....1 Tlr, 1-ton.....1 Trk, ¾-ton, Wpns Carr.....1 Trk, 1½-ton, cargo.....1	Handles Sups of 25,000 to 50,000 Trs.
	BE	O.....1 EM.....29 Agg.....30	Tlr, 1-ton.....2 Trk, ¾-ton, Wpns Carr.....1 Trk, 1½-ton, cargo.....1 Trk, 2½-ton, cargo.....1	Handles Sups of 50,000 to 100,000 Trs.

162. MEDICAL DEPARTMENT UNITS:

d. Medical Service Organization, T/O & E 8-500:

(2) *Supply and Maintenance Teams (Continued):*

1	2	3	4
Unit	Personnel	Vehicles	Remarks
9	BF OPTICAL REPAIR DETACHMENT: O.....1 EM.....6 Agg.....7	Trk, 2½-ton, Optical Repair Unit.....1 Tlr, 1-ton.....1 Trk, ¾-ton, Wpns Carr.....1	Manufactures and Reps eyeglasses.
10	BG OPTICAL REPAIR DETACHMENT: (Augmentation) EM.....2	Trk, ¼-ton.....1	2 teams usually augment 1 team BF and will serve 150,000 Trs.
11	DENTAL PROSTHETIC DETACHMENT: BH (Mbl) O.....1 EM.....3 Agg.....4 BI (Fixed) O.....2 EM.....6 Agg.....8	Trk, 2½-ton, Lab, dental.....1 Tlr, 1-ton.....1	Mbl prosthetic team provides additional Sv in T of Opns. 1 per 30,000 Trs. Fixed prosthetic team provides dental Lab in CZ.
12	MAINTENANCE DETACHMENTS: BJ O.....1 EM.....5 Agg.....6 BK O.....1 EM.....8 Agg.....9 BL O.....1 EM.....12 Agg.....13	Trk, 1½-ton, cargo.....1 Trk, 1½-ton, cargo.....1	3d and 4th Ech Maint of Med Equip to serve 50,000 to 100,000 Trs. Same as team BJ. 5tb Ech Maint of Med Equip as required in theater.

(3) *Motor Ambulance and Veterinary Service Teams.*

13	CA AMBULANCE DETACHMENTS: EM.....8	Trk, ¼-ton.....1 Trk, ¾-ton, Amb, KD.....3	Provides additional Amb Sv as required in the theater.
	CB O.....1 EM.....14 Agg.....15	Trk, ¼-ton.....1 Trk, ¾-ton, Amb, KD.....6	Same as team CA.
	CC O.....1 EM.....24 Agg.....25	Trk, ¼-ton.....1 Trk, ¾-ton, Amb, KD.....10	Same as team CA.

162. MEDICAL DEPARTMENT UNITS:

*d. Medical Service Organization, T/O & E 8-500:**(3) Collection and Evacuation Units (Continued):*

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
14	VET EVAC CD	DETACHMENTS: EM.....3	Semi-Tlr, 6-ton, combination Anl and cargo.....1 Trk, 4-, 5-ton, Trac.....1	Provides additional Evac Sv for Anl units. (8 Anls.)
	CE	O.....1 EM.....10 Agg.....11	Semi-Tlr, 6-ton, combination Anl and cargo.....3 Trk, 4-, 5-ton, Trac.....1	Same as CD. (24 Anls.)
15	VET HOSP DA	DETACHMENTS: O.....1 EM.....19 Agg.....20	Tlr, 2-horse, van.....1 Trk, ¾-ton, Wpns Carr.....1 Trk, 2½-ton, cargo.....1	Provides Anl Evac Hosp facilities for small units. (30 Anls.)
	DB	O.....2 EM.....35 Agg.....37	Tlr, 2-horse, van.....1 Trk, ¾-ton, Wpns Carr.....1 Trk, 2½-ton, cargo.....1	Same as DA. (75 Anls.)
	DC Vet Anl SV Det	O.....1 EM.....4 Agg.....5	Trk, ¾-ton, Wpns Carr.....1 Mule, pack.....3	Provides additional Pers for treat- ment of sick and wounded Anls. moves by Trk or by pack Anls.
	DD Vet Food Ins Det	O.....1 EM.....4 Agg.....5	Trk, ¾-ton, Wpns Carr.....1	Performs food inspection at food procurement Pts or elsewhere in Theater. 1 per 25,000 Trs.

(4) Professional Services Detachments:

16	EA Surgical Det	O.....3 N.....1 EM.....3 Agg.....7	Trk, 2½-ton, surgical, operating.....(1) Tlr, 1-ton.....(1) Trk, 1½-ton, cargo.....1	(1) Issued on basis of one per 2 surgical, orthopedic, maxillofacial, neurosurgical and thoracic surgi- cal teams. May be employed by any 2 types of surgical teams. Tlr issued on basis of one per Trk. EA, EB, EC, ED, EE, EF, and EI reinforce any Instl or unit as required.
17	EB Orthopedic Det	O.....3 N.....1 EM.....3 Agg.....7	Trk, 2½-ton, surgical, operating.....(1) Tlr, 1-ton.....(1) Trk, 1½-ton, cargo.....1	Trk and Tlr issued on same basis as EA.
18	EC Shock Det	O.....1 N.....1 EM.....2 Agg.....4	Trk, ¾-ton, Wpns Carr.....1	
19	ED Maxillo- facial Det	O.....3 N.....1 EM.....3 Agg.....7	Trk, 2½-ton, surgical operating.....(1) Tlr, 1-ton.....(1) Trk, 1½-ton, cargo.....1	Trk and Tlr issued on same basis as EA.

162. MEDICAL DEPARTMENT UNITS:

d. Medical Service Organization, T/O & E 8-500:

(4) *Professional Services Detachments (Continued) :*

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
20	EE Neurosurgical Det	O.....3 N.....1 EM.....3 Agg.....7	Trk, 2½-ton, surgical operating.....(1) Tlr, 1-ton.....(1) Trk, 1½-ton, cargo.....1	Trk and Tlr issued on same basis as EA.
21	EF Thoracic Surgical Det	O.....3 N.....1 EM.....3 Agg.....7	Trk, 2½-ton, surgical, operating.....(1) Tlr, 1-ton.....(1) Trk, 1½-ton, cargo.....1	Trk and Tlr issued on same basis as EA.
22	EG Gas Det	O.....1 EM.....12 Agg.....13	Tlr, 1-ton.....2 Trk, ¾-ton, Wpns Carr.....1 Trk, 2½-ton, cargo, w/w.....2	Assigned on basis of 1 team per 75,000 Trs or fraction thereof.
23	EH Dental Oper Det	O.....1 EM.....1 Agg.....2	Trk, 2½-ton, dental operating.....1	Provides dental surgical treatment as required.
24	EI X-ray Det	O.....1 EM.....2 Agg.....3	Tlr, 1-ton.....1 Trk, 2½-ton, cargo.....1	

(5) *Miscellaneous Units:*

25	FA Malaria Control Det	O.....1 EM.....11 Agg.....12	Trk, ¼-ton.....2 Trk, ¾-ton, Wpns, Carr, w/w.....2 Trk, 2½-ton, cargo, w/w.....2 Trk, 2½-ton, Dp, w/w.....2	Plans malaria control measures and supervises execution.
26	FB Malaria Survey Det	O.....2 EM.....11 Agg.....13	Tlr, ¼-ton.....1 Trk, ¼-ton.....3 Trk, ¾-ton, Wpns Carr w/w.....2	Surveys prevalence of malaria and character of parasite. Checks effectiveness of control and suppressive measures. Operates Mbl Lab.
27	GA Gen Disp GB	O.....7 EM.....13 Agg.....20 O.....12 EM.....26 Agg.....38	Trk, ¾-ton, Amb, KD.....1 Trk, ¾-ton, Wpns Carr.....1 Tlr, ¼-ton.....1 Trk, ¼-ton.....1 Trk, ¾-ton, Amb, KD.....1 Trk, ¾-ton, Wpns Carr.....2	Serves 2,000 to 5,000 Trs. Serves 5,000 to 10,000 Trs.
28	GC Disp	O.....3 EM.....17 Agg.....20	Trk, ¼-ton.....1 Trk, ¾-ton, Amb, KD.....1	Officers to be furnished only as required and available within the continental limits of the United States. Will be furnished prior to departure for oversea duty. Provides temporary hospitalization for 1,500 to 3,000 Trs.

162. MEDICAL DEPARTMENT UNITS:

*d. Medical Service Organization, T/O & E 8-500:**(5) Miscellaneous Units (Continued):*

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
29	HA Gen Lab	O.....23 EM.....69 Agg.....92	Trk, 2½-ton, Lab, Med.....2 Trk, 1-ton.....2 Trk, ¼-ton.....2 Trk, ¾-ton, Wpns Carr.....2 Trk, 1½-ton, cargo.....1	Research and biological manufacture, 1 per theater.
30	HB Lab	O.....11 EM.....42 Agg.....53	Trk, 2½-ton, Lab, Med.....3 Trk, 1-ton.....4 Trk, 1-ton, water tank, 250-gal.....1 Trk, ¼-ton.....3 Trk, ¾-ton, Wpns Carr.....1 Trk, 2½-ton, cargo.....3	Provides 1 stationary Lab and 3 Mbl Labs; 1 per Army or Sec of Com Z.
31	IA Med Det	O.....2 EM.....8 Agg.....10	Trk, 1-ton.....1 Trk, 1½-ton, cargo.....1	Officers furnished on same basis as GC. Provides Med Sv to separate Bn without organic Med Trs.
32	JA Sanitary Plat	O.....1 EM.....47 Agg.....48		Performs Gen sanitary work and malaria control.
33	KA Museum and Arts Det	O.....1 EM.....6 Agg.....7	Trk, ¾-ton, Wpns Carr.....1	Records new Med procedures, collects and ships specimens for research and historical purposes.
34	LA Litter Det	EM.....25		Spts any existing Med unit.
35	MA Pro Det	EM.....6		Operates prophylactic Sta in city or town.
36	BLOOD TRANSFUSION DETACHMENT:			
	NA	O.....2 EM.....13 Agg.....15	Trk, ¼-ton.....1 Trk, 1½-ton, cargo.....3	Procures donors, collects, stores and Distr blood to Fwd units. Spts 1 Corps. Same as NA. Supports 1 Field Army.
	NB	O.....5 EM.....26 Agg.....31	Trk, ¼-ton.....1 Trk, ¾-ton, Wpns Carr.....2 Trk, 1½-ton, cargo.....2 Trk, 2½-ton, cargo.....2	

162. MEDICAL DEPARTMENT UNITS:

*e. Units Normally Atchd to a Field Army:*¹

1	1	2	3	4	5	6	7
	Types of Units	T/O	Strength				Patient Capacity
			O	N	WO	EM	
2	Med Section-Army Hq.....	200-1	25		1	35	
3	Hq & Hq Det, Med Gp.....	8-22	11			26	
4	Hq & Hq Det, Med Bn, Sep.....	8-26	6		1	21	
5	Coll Co (Sep).....	8-27	5			95	
6	Amb Co Mtr (Sep).....	8-317	4			85	
7	Clr Co (Sep).....	8-28	13			99	250
8	Evacuation Hospital.....	8-580	47	54*	1	303	750
9	Evacuation Hospital (Sem).....	8-581	38	40	1	207	400
10	Convalescent Hospital.....	8-590	31			184	3,000
11	Medical Laboratory.....	8-500	11			42	
12	Medical Depot Company, CZ.....	8-667	12		1	120	
13	Field Hospital (THQ).....	8-510	22	18		182	400
14	Portable Surgical Hospital.....	8-572S	4			33	25
15	Sanitary Company (THQ).....	8-117	3			109	
16	Medical Professional Services.....	8-500		Variable			
17	Vet Co (Sep) (THQ Unit).....	8-99	5			59	
18	Vet Evac Hosp.....	8-780	6			84	150
19	Vet Conv Hosp (THQ Unit).....	8-790	6			151	1,000 to 2,000

¹ Assigned or attached in accordance with policies of the Theater Commander.

* 1 hospital dietitian.

*f. Medical Department Units in a Communications Zone:*¹

1	1	2	3	4	5	6	7
	Types of Units	T/O	Strength				Patient Capacity
			O	N	WO	EM	
2	Medical Holding Battalion.....	8-55	28		1	414	
3	Hospital trains—each.....	8-520	4	6		39	300 lying
4	General Hospital.....	8-550	55	83	1	450	1,000
5	Hq & Hq Det Hospital Center (Gen Hosp not Incl).....	8-500	7	1	1	22	2,000 to 20,000
6	Station Hospital.....	8-560 ²	20	21		133	25 to 900
7	Medical Professional Services Unit.....	8-500		Variable			
8	Medical Laboratory.....	8-500	11			42	
9	General Laboratory.....	8-500	23			69	
10	Medical Depot Orgn.....	8-500		Variable			
11	Med Base Depot Co.....	8-187	3		1	40	
12	General Dispensary.....	8-500		Variable			
13	Hq & Hq Det Med Concentration Center (THQ unit).....	8-500	5			14	
14	Med Sv Orgn.....	8-500					
15	Veterinary Company (Separate) (THQ unit).....	8-99	5			59	
16	Veterinary Evacuation Hospital.....	8-780	6			84	150
17	Veterinary General Hospital.....	8-750	10			243	500 to 1,000
18	Veterinary Conv Hosp (THQ unit).....	8-790	6			151	1,000 to 2,000
19	Veterinary Station Hospital, Com Z.....	8-760	6			80	150 to 300

¹ Assigned or attached in accordance with policies of the Theater Commander.² T/O for 250-Bed Station Hospital is shown.

■ 163. MILITARY POLICE UNITS:

a. Air Force Units:

1	1 Unit	2 Personnel	3 Vehicles	4 Remarks
2	MP Co Avn T/O & E 19-217 (26 Jan 45)	See Par 163 d, line 6		Normally assigned to Air Sv Comds or Sv Gps.

b. Organic Units:

2	MP Plat Inf Div T/O & E 19-7 (12 Sept 44)	O..... 4 EM.....102 Agg.....106	Trk, ¾-ton, Wpn Carr..... 4 Trk, ¾-ton.....23	1 per Inf Div. Commanded by Div PM. Consists of Plat Hq, Police Sec, 3 Sqds and Traf Sec, 5 Sqds. Plat Atchd to Div Hq for mess. Wt (short tons): on wheels, 38; boxed, 42. Cubage (ship tons): on wheels, 193; boxed, 152.
3	MP Plat Armd Div T/O & E 19-117 (28 Sept 44)	O..... 3 EM.....84 Agg.....87	Car, half-track, M3A2, wo/Armt..... 1 Trk, ¾-ton.....19 Trk, ¾-ton, Wpn Carr..... 3	1 per Armd Div. Commanded by Div PM. Consists of Plat Hq, Police Sec, 2 Sqds Traf Sec, 4 Sqds. Plat Atchd to Tn Hq Co for Adm and mess. Wt (short tons): on wheels, 38; boxed, 42. Cubage (ship tons): on wheels, 179; boxed, 146.
4	MP Plat Airborne Div T/O & E 19-97T (16 Dec 44)	O..... 3 EM.....83 Agg.....86	Mtrcls, solo..... 2 Mtrcls, solo, extra light..... 2 Tr, ¾-ton..... 4 Trks, ¾-ton.....17	1 per Abn Div. Commanded by Div PM. Consists of Plat Hq and Police Sec, 3 Sqds, and Traffic Sec, 3 Sqds. Plat Atchd to Div Hq Co for Adm and mess.
5	MP Plat Corps T/O & E 19-77 (1 Aug 44, C1)	O..... 3 EM.....42 Agg.....45	Trk, ¾-ton.....7	1 per Corps. Performs MP functions for Corps Hq and Corps Trs. Commanded by Corps PM. Consists of Plat Hq and 2 Secs 2 Sqds Ea. Wt (short tons): on wheels, 9 boxed, 10. Cubage (ship tons): on wheels, 43 boxed, 32.

163. MILITARY POLICE UNITS:

c. Combat Support Units:

1	2	3	4
Unit	Personnel	Vehicles	Remarks
2 MP Bn Army T/O & E 19-35 (19 Aug 43, C1, 2)	O..... 23 WO..... 1 EM.....542 Agg.....566	Tlr, ¼-ton..... 9 Tlr, 1-ton..... 5 Trk, ¼-ton.....53 Trk, ¾-ton, Wpn Carr..... 4 Trk, 2½-ton..... 6	1 per Army. Polices army Sv area, handles Evac of PW from Div, operates Army PW Encl. Consists of Hq Det, T/O 19-36, and 3 Cos T/O 19-37. Cos may be attached to Corps or Divs when needed. Wt (short tons): on wheels, 135; hoxed, 159. Cuhage (ship tons): on wheels, 660; hoxed, 383.
3 MP Co T/O & E 19-37 (19 Aug 43, C1, 2)	O..... 5 EM.....165 Agg.....170	Tlr, ¼-ton..... 3 Tlr, 1-ton..... 1 Trk, ¼-ton.....16 Trk, ¾-ton, Wpn Carr..... 1 Trk, 2½-ton..... 1	1 per Corps or Task Force. Polices Corps Sv area, operates Corps PW Encl when necessary. Cos may be Sep or Atchd from Army Bn. Consists of Police Plat, 4 Sqds and 2 Traf Plats, 4 Sqds Ea. Plats may be Atchd Divs when needed. Wt (short tons): on wheels, 36; boxed, 42. Cuhage (ship tons): on wheels, 176; hoxed, 99.
4 MP Escort Guard Co T/O & E 19-47 (25 Nov 43, C1)	See Par 163 d, line 2.		
5 MP PW Processing Co T/O 19-237 (18 Nov 43, C1, 2)	See Par 163 d, line 3.		

163. MILITARY POLICE UNITS:

d. Service Units:

1	2	3	4
Unit	Personnel	Vehicles	Remarks
2 MP Escort Guard Co T/O & E 19-47 (25 Nov 43, C1)	O..... 3 EM.....132 Agg.....135	Bicycle.....4 Trk, ¾-ton, Wpn Carr.....2 Trk, 2½-ton.....2 <i>Remarks—(Continued)</i> Wt (short tons): on wheels, 15; hoxed, 17. Cuhage (ship tons): on wheels, 101; hoxed, 64.	Furnishes the escort and guard for PW at PW Encl, Camps and in transit. Consists of Co Hq and 4 Escort Guard Secs. Used in ZI, Com Z and in Army area. Secs may be Atchd to Divs when needed.
3 MP PW Processing Co T/O 19-237 (18 Nov 43, C1, 2)	O..... 5 EM.....111 Agg.....116	Tlr, 1-ton.....7 Trks, 2½-ton.....7 <i>Remarks—(Continued)</i> Wt (short tons): on wheels, 41; hoxed, 45. Cubage (ship tons): on wheels, 327; hoxed, 176.	Normally employed in Com Z to process PWs. May be Atchd to Army where processing can be accomplished in Army area. Consists of Co Hq and 3 Plats. Plats may be Atchd to Corps or Task Forces when necessary. Each Plat capable of processing 60 PW per hour.
4 MP Bn T/O & E 19-55 (21 Nov 44)	O..... 29 WO..... 1 EM.....619 Agg.....649 (Includes Med Det)	Amb, ¾-ton.....1 Car, scout, w/Armt.....12 Tlr, ¾-ton.....12 Tlr, 1-ton.....9 Trk, ¼-ton.....19 Trk, ¾-ton, Wpn Carr.....4 Trk, 1½-ton.....18 Trk, 2½-ton.....4 Trk, 4-ton, wrecker.....1	Performs internal security measures in the ZI and Com Z. Consists of Hq and Hq Det, T/O & E 19-56, 4 MP Cos, T/O & E 19-57, and Atchd Med Trs. Wt (short tons): on wheels, 193; hoxed, 212. Cuhage (ship tons): on wheels, 1,133; hoxed, 791.
5 MP Co T/O & E 19-57 (2 Nov 44)	O..... 5 EM.....144 Agg.....149	Car, scout, w/armt.....3 Tlr, ¾-ton.....3 Tlr, 1-ton.....2 Trk, ¼-ton.....4 Trk, 1½-ton.....4 Trk, 2½-ton.....1	Performs internal security measures in ZI and T of Opns. Part of MP Bn (T/O 19-55). Sep num- bered Cos may be organized under this table for use in Com Z or ZI, when a Co will meet MP requirements. Consists of Co Hq, Scout Car Sec, and 3 Plats. Wt (short tons): on wheels, 40; hoxed, 44. Cuhage (ship tons): on wheels, 235; hoxed, 159.
6 MP Co Post, Camp or Station T/O & E 19-217 (26 Jan 45)	O..... 4 EM..... 97 Agg.....101	<i>Types A B C</i> Tlr, 1-ton..... 1 1 1 Bicycle..... 4 10 6 Mtrcl.....16 7 Trk, ¼-ton.....16 4 11 Trk, ¾-ton, Wpn Carr..... 3 3 3 Trk, 1½-ton, cargo..... 1 2 1	Prevents and investigates crimes, enforces laws and regulations, operates guardhouse, controls traffic, controls Mvmt of indi- viduals. Cos assigned to Com Z as required. Contains following sections: Desk Record Reg; Criminal Investiga- tion; Traffic and Gate; Dis- mounted Patrol; and Mtrd. This unit is flexible. May be supple- mented by additional compo- nents of T/O & E 19-500 as needed.

163. MILITARY POLICE UNITS:

d. Military Police Service Organization T/O & E 19-500 (22 Apr 44) : a cellular type organization which provides military police administrative and maintenance facilities, police, traffic, criminal investigation and prisoner of war guard teams of different strength according to actual requirements of particular areas.

(1) Administration Teams:

1	2	3	4
Unit	Personnel	Vehicles	Remarks
HEADQUARTERS TEAMS:			
2 AA Plat Hq	O.....1 EM.....2 Agg.....3	Trk, ¼-ton, Wpn Carr.....1	For equivalent of 2 or more teams, Sqds, or Secs. (Not less than 20 individuals.)
AB Plat Hq (Separate)	O.....1 EM.....5 Agg.....6	Tlr, ¼-ton.....1 Trk, ¼-ton, Wpn Carr.....1	For equivalent of 2 or more teams, Sqds, or Secs operating as a Sep Plat. (Not less than 20 individuals.)
AC Co Hq	O.....2 EM.....11 AM.....13	Tlr, ¼-ton.....1 Tlr, 1-ton.....1 Trk, ¼-ton.....1 Trk, ¾-ton, Wpn Carr.....1 Trk, 2½-ton, cargo.....1	
AD Bn Hq	O.....4 EM.....12 Agg.....16	Trk, ¼-ton.....1 Trk, ¾-ton, Wpn Carr.....1	
3 MESS TEAMS:			
AE	EM.....4		
AF	EM.....6		
AG	EM.....8		
AH	EM.....9		
AI	EM.....11		
4 MECHANICS	TEAMS:		
AJ	EM.....1		
AK	EM.....2		
5 RADIO TEAMS:			
AL	EM.....1	Trk, ¼-ton.....1	
AM	EM.....2	Trk, ¾-ton, Wpn Carr.....1	
AN	EM.....3		

163. MILITARY POLICE UNITS:

d. Military Police Service Organization T/O & E 19-500 (22 Apr 44)

(Continued):

(2) Police Teams:

1	2	3	4
Unit	Personnel	Vehicles	Remarks
6 BA Police Sq	EM.....12		
7 GATE AND PATROL SECTIONS: BB BC BD BE BF	EM.....3 EM.....2 EM.....3 EM.....5 EM.....7		
8 DESK, RECORD AND REGISTRATION SECTIONS: BG BH	EM.....9 EM.....13		
9 CRIMINAL INVESTIGATION SECTIONS: BI BJ BK	EM.....7 O.....1 EM.....10 Agg.....11 O.....1 EM.....14 Agg.....15	Trk, 1/4-ton.....1 Tlr, 1/4-ton.....1 Trk, 1/4-ton.....5 Tlr, 1/4-ton.....1 Trk, 1/4-ton.....3	
10 MP, OCCUPIED TERRITORY, TEAMS: BL BM	EM.....3 O.....1 EM.....8 Agg.....9		

(3) Traffic Control, Patrol and Reconnaissance Teams:

11 CA Traffic Sq	EM.....12		
12 CB Mtrcl Patrol	EM.....3	Mtrcl.....2	
13 CC Car Patrol	EM.....6	Trk, 1/4-ton.....2	
14 CD Bicycle Patrol	EM.....3	Bicycle.....2	
15 CE Scout Car Team	EM... 5	Scout Car, w/armt.....1	

163. MILITARY POLICE UNITS:

d. Military Police Service Organization T/O & E 19-500 (22 Apr 44):

(3) Traffic Control, Patrol and Reconnaissance Teams (Continued):

1	2	3	4
Unit	Personnel	Vehicles	Remarks
16	DISMOUNTED GUARD TEAMS: CF CG CH CI CJ	EM.....3 EM.....1 EM.....3 EM.....5 EM.....7	

(4) Prisoner of War Teams:

17	PRISONER OF WAR ENCLOSURES, ENCLOSURE GUARD TEAMS: DA DB DC DD	EM.....12 EM.....21 O.....1 EM.....48 Agg.....49 O.....1 EM.....90 Agg.....91	
18	PRISONER OF WAR ENCLOSURES, OUTSIDE GUARD TEAMS: DE DF DG DH	EM.....2 EM.....2 EM.....1 EM.....1	
19	PRISONER OF WAR ENCLOSURES, MACHINE GUN TEAMS: DI	EM.....3	
20	DJ Escort Sec	O.....1 EM.....25 Agg.....26	

■ 164. ORDNANCE UNITS (All figures include Atchd Med & Ch.):

a. Air Force Units:¹

1	2	3	4
Unit	Personnel	Vehicles	Remarks
2	Ord Maint Co, Air Force T/O & E 9-257 (16 Sept 43, C1, 2, 3)	O..... 8 WO..... 1 EM..... 216 Agg..... 225 Tlr, 1-ton, cargo..... 26 Tlr, 1-ton, 250 Gal water tank..... 1 Trk, 1/4-ton..... 5 Trk, 3/4-ton, Comd..... 1 Trk, 3/4-ton, Wpn Carr..... 5 Trk, 2 1/2-ton, cargo..... 20 Trk, Ord Spec Rep..... 6 Trk, Hv wrecker..... 1 Trk, 4-ton, wrecker..... 2	As required, normally assigned to an AF Gen Dep. Performs 4th Ech Maint & overflow 3d Ech Maint of Veh and Armt of an AF. Wts (short tons): on wheels 260; boxed 282. Cubage (ship tons): on wheels, 1,671; boxed 1,199.
3	Ord Sup & Maint Co Avn T/O & E 9-417 (28 Oct 44, C1)	O..... 4 EM..... 74 Agg..... 78 Tlr, 1/2-ton, Dp..... 2 Tlr, 1-ton..... 4 Tlr, Bomb..... 4 Trk, 1/4-ton..... 2 Trk, 3/4-ton, Wpn Carr..... 3 Trk, 2 1/2-ton, cargo..... 3 Trk, 2 1/2-ton Bomb Sv, M-27..... 1 Trk, Ord Spec Rep..... 5 Trk, bomb Sv, M6..... 2 Trk, 4-ton, wrecker..... 1 Trk-Trac, 7 1/2-ton w/Tlr semi 12 1/2-ton & Dolly Convector. C-2 wrecking unit. 1 Trac-crane, 3-ton..... 1 <i>Torpedo Section</i> Trk, 3/4-ton, Wpn Carr..... 1 Trk, 4-ton..... 1 Trk, 2 1/2-ton, cargo..... 1	Assigned 1 Co per C Gp. Usually operates with an Air Sv Gp. Provides Ord Gen Sup & Am Sup and 3d Ech Maint on automotive & Armt Equip. Torpedo Sec 1-O & 10-EM added when Torpedo Sq is being serviced. Aerial Mine Sec 1-O & 10-EM added when Aerial Mines are serviced. Automotive Maint team 7-EM added per 100 additional Veh serviced. Wts (short tons): on wheels 122; boxed 134. Cubage (ship tons): on wheels, 733; boxed 614.
4	Ord M Auto Maint Plat, Avn T/O & E 9-427 (8 Feb 44, C1)	O..... 2 EM..... 46 Agg..... 48 Trk, 1/4-ton..... 1 Trk, 3/4-ton, Comd..... 1 Trk, 3/4-ton, Wpn Carr..... 1 Trk, 2 1/2-ton, cargo..... 5 Trk, 4-ton, wrecker..... 1	Provides 3d Ech Maint for Approx. 350 Veh. Assigned to Air Deps, Trk Orgns or AF Instls without facilities for 3d Ech Veh Maint. Wts (short tons): on wheels 45; boxed 50. Cubage (ship tons): on wheels 294; boxed 200.

¹ Ord Am Co, T/O & E 9-17 and Ord Dep Co, T/O & E 9-57 listed under Combat Support units are also units of the Air Forces.

164. ORDNANCE UNITS:

b. Combat Support Units:

(1) *Organic Units:*

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
2	Abn Ord Maint Co T/O 9-87T (16 Dec 44)	O..... 9 WO..... 1 EM..... 98 Agg.....108	See Par 113 b.	Organic to Abn Div. Includes O-2 and EM-9 for Div Ord Sec. Performs 3d Ech Maint and Sup. Capable of independent Opns 3 to 6 days. Capacity of from 30 to 60 percent of 3d Ech Maint of Div.
3	Ord Maint Bn, Armd Div T/O & E 9-65 (15 Dec 44)	O..... 42 WO..... 6 EM.....693 Agg.....741	See Par 117.	Organic to Armd Div. Consists of Hq & Hq Co (T/O & E 9-66), 3 Maint Cos (T/O & E 9-67) & Med Det (O-2 & EM-8). Performs 3d Ech Maint & Sup. Wts (short tons): on wheels 1,282; boxed 1,310. Cubage (ship tons): on wheels, 7,168; boxed 5,486.
4	Hq & Hq Co, Ord Maint Bn, Armd Div T/O & E 9-66 (15 Dec 44)	O..... 19 WO..... 3 EM.....137 Agg.....159	See Par 117.	1 per Maint Bn, Armd Div (T/O & E 9-65). Provides base of Opns for Maint Cos.
5	Maint Co Ord Maint Bn, Armd Div T/O & E 9-67 (15 Dec 44)	O..... 7 WO..... 1 EM.....183 Agg.....191	See Par 117.	3 per Maint Bn, Armd Div (T/O & E 9-65). Wts (short tons): on wheels 238; boxed, 374. Cubage (ship tons): on wheels 2,010; boxed 1,430.
6	Ord L Maint Co Inf Div T/O & E 9-8 (17 Nov 44)	O..... 9 WO..... 1 EM.....131 Agg.....141	See Par 121.	Organic to Inf Div. Performs 3d Ech Maint & Sup. Capacity 30% to 60% of 3d Ech Maint for the Div. Includes O-3 & EM-11 for Div Ord Sec. Wts (short tons): on wheels 144; boxed, 158. Cubage (ship tons): on wheels 947; boxed 654.

164. ORDNANCE UNITS:

*b. Combat Support Units (Continued):**(2) Administrative Units:*

1	1 <i>Unit</i>	2 <i>Personnel</i>	3 <i>Vehicles</i>	4 <i>Remarks</i>
7	Hq & Hq Det, Ord Gp T/O & E 9-12 (15 Apr 44)	O.....12 WO.....2 EM.....39 Agg.....53	Tlr, 1/4-ton.....2 Tlr, 1-ton.....1 Trk, 1/4-ton.....6 Trk, 3/4-ton, Wpn Carr.....2 Trk, 1 1/2-ton, cargo.....1	Normal assignment Army or Independent Corps. Supervises training and Opn of 4 to 5 Ord Bns. Wts (short tons): on wheels 17; hoxed, 19. Cuhage (ship tons): on wheels 102; hoxed 69).
8	Hq & Hq Det, Ord Bn T/O 9-76 (9 Nov 44)	O.....5 WO.....1 EM.....19 Agg.....25	Tlr, 1-ton.....1 Trk, 1/4-ton.....1 Trk, 3/4-ton, Wpn Carr.....1 Trk, 2 1/2-ton, cargo.....1	Normally 2 to 5 Ord Cos will be Atchd to this Hq. Performs Adm functions for a Gp of Cos operating in the same area. Wts (short tons): on wheels 10; hoxed 11. Cuhage (ship tons): on wheels 67; hoxed 43.
9	Hq & Hq Det Ord Am Bn T/O 9-15 (1 Apr 42)	O.....4 EM.....23 Agg.....27	Car, 5-passenger, L Sedan.....1 Trk, 1/4-ton.....2 Trk, 3/4-ton, Wpn Carr.....1 Trk, 2 1/2-ton, cargo.....2	Normally 2 to 6 Ord Am Cos (T/O 9-17) will be Atchd to this Hq. Assigned to Army & Com Z Dep as required.

(3) Supply Units:

10	Ord Am Co T/O 9-17 (17 Feb 45)	O.....6 EM.....173 Agg.....179	Tlr, 1-ton.....1 Trk, 1/4-ton.....4 Trk, 3/4-ton, Wpn Carr.....3 Trk, 2 1/2-ton, cargo.....10 When assigned to AF following additional Veh Atzdz: Trk, 2 1/2-ton, Bomb Sv, M-27.....2 Trk-Trac, 7 1/2-ton, w/Tlr-Semi, 12 1/2-ton & dolly converter C-2, wrecking unit.....2 Trac-Crane, 2-ton w/Bulldozer.....2	Normally assigned to Army, AF or Com Z as required to operate Am Sup Pt or Dep. Can handle approx 600 tons per day.
11	Ord Dep Co T/O & E 9-57 (2 May 45)	O.....5 WO.....1 EM.....174 Agg.....180	Semi-Tlr, 6-ton, Comb Anl & cargo.....16 Tlr, 1-ton.....2 Trk, 1/4-ton.....2 Trk, 3/4-ton, Wpn Carr.....2 Trk, 2 1/2-ton, cargo.....2 Trk, Trac, 4-5-ton.....4 Trk, Hv, wrecker.....1	Normally assigned to Army or AF to operate Dep supplying all Cls Ord Mat except Am. Can perform Army Sup for an Av of from 15,000 to 45,000 men, subject to variations depending on the type of units in the force. Wts (short tons): on wheels 117; boxed, 129. Cubage (ship tons): on wheels 1,066; boxed 1,019.

164. ORDNANCE UNITS:

b. Combat Support Units:(3) *Supply Units (Continued):*

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
12	Ord Evac Co T/O 9-187 (20 Oct 42)	O..... 6 EM.....179 Agg.....185	Tlr, 1-ton..... 2 Trk, 1/4-ton..... 7 Trk, 3/4-ton, Comd..... 1 Trk, 3/4-ton, Wpn Carr..... 3 Trk, 2 1/2-ton, cargo..... 3 Trk, Hv, wrecking..... 3 Trk, 40-ton, Tk recovery.....18	Assigned to Army & Com Z as required. Trans Tks & Hv Equip from Com Z bases and Army Dep to Div Distr Pts & Evacs Tks from C area to Rep Shops. Wt (short tons): on wheels, 836; boxed, 920. Cubage (ship tons): on wheels, 2,473; boxed, 2,401.

(4) *Maintenance Units:*

13	Ord Hv Automotive Maint Co T/O & E 9-197 (27 May 44)	O..... 6 WO..... 1 EM.....195 Agg.....202	Tlr, 1-ton.....12 Semi-Tlr, 6-ton, Comb Anl & cargo..... 5 Trk, 1/4-ton..... 2 Trk, 3/4-ton, Wpn Carr..... 2 Trk, 2 1/2-ton, cargo.....10 Trk, Ord Sp Rep..... 2 Trk, 4-ton, wrecker..... 2 Trk, Hv, wrecker..... 2 Trk, Trac, 4-5-ton..... 2	Normally assigned to Army. Performs 4th Ech Maint for Approx 2500 wheel Veh, including GP Veh, scout cars, and half-tracks. Can also maintain limited number of small arms. Wt (short tons): on wheels, 164; boxed, 180. Cubage (ship tons): on wheels, 1,150; boxed, 922.
14	Ord Hv Maint Co Field Army T/O & E 9-9 (3 Jul 43, C1)	O..... 5 WO..... 1 EM.....192 Agg.....198	Semi-Tlr, 6-ton, Comb Anl & cargo..... 2 Semi-Tlr, 6-ton, van..... 4 Tlr, 1-ton..... 2 Trk, 1/4-ton..... 2 Trk, 3/4-ton, Wpn Carr..... 3 Trk, 2 1/2-ton, cargo..... 6 Trk, Ord Sp Rep.....10 Trk, Trac, 4-5-ton..... 2 Trk, Hv, wrecker..... 2	Normally assigned to Army. Performs 4th Ech Maint for Wpns, instruments and a limited number of Veh. Capacity, Approx 4 Inf Div, 5AAA Gps or 5 FA Gps. Wt (short tons): on wheels, 144; boxed, 170. Cubage (ship tons): on wheels, 947; boxed, 654.
15	Ord Tk Maint Co T/O & E 9-37 (3 Jul 43)	O..... 8 WO..... 1 EM.....193 Agg.....202	Tlr, 1-ton.....15 Trk, 1/4-ton..... 5 Trk, 3/4-ton, Wpn Carr..... 6 Trk, 2 1/2-ton, cargo.....18 Trk, Ord Sp Rep..... 5 Trk, Hv, wrecker..... 3 Trk, Tlr, 40-ton, Tk T..... 2	Normally assigned to Army. Performs 3d Ech Maint for all types Armd Equip with emphasis on Tks. Capacity 1 Armd Div or its equivalent in Equip. Wt (short tons): on wheels, 232; boxed, 255. Cubage (ship tons): on wheels, 1,365; boxed, 1,348.

164. ORDNANCE UNITS:

b. Combat Support Units:(4) *Maintenance Units (Continued):*

1	1 <i>Unit</i>	2 <i>Personnel</i>	3 <i>Vehicles</i>	4 <i>Remarks</i>
16	Ord Maint Co AA T/O & E 9-217 (28 Mar 44)	O..... 6 WO..... 1 EM.....156 Agg.....163	Tlr, 1-ton.....15 Trk, 1/4-ton..... 2 Trk, 3/4-ton, Wpn Carr..... 5 Trk, 2 1/2-ton, cargo.....10 Trk, Ord Sp Rep..... 5 Trk, Hv, wrecker..... 1	Normally assigned to Army; basis, 1 Co per 5 AA Bns. Atchd as necessary to Hq of large AA Conc. Performs 3d & 4th Ech Maint of AA guns, fire control instruments and Veh. Wt (short tons): on wheels, 119; boxed, 131. Cubage (ship tons): on wheels, 870; boxed, 632.
17	Ord M Maint Co T/O 9-7 (30 Sept 44)	O..... 6 WO..... 1 EM.....155 Agg.....162	Tlr, 1-ton.....17 Trk, 1/4-ton..... 5 Trk, 3/4-ton, Wpn Carr..... 4 Trk, 2 1/2-ton, cargo.....13 Trk, Ord Sp Rep..... 5 Trk, 4-ton, wrecker..... 1 Trk, Hv, wrecker..... 1	Normally assigned to Army. Organ- ic to Cav Div with Div Ord Sec of O-3 & EM-11 added. Performs 3d Ech Maint on weapons, instruments, and a limited num- ber of Veh.
18	Ord M Auto- motive Maint Co T/O & E 9-127 (19 May 44)	O..... 4 EM.....112 Agg.....116	Tlr, 1-ton.....14 Trk, 1/4-ton..... 2 Trk, 3/4-ton, Wpn Carr..... 4 Trk, 2 1/2-ton, cargo.....13 Trk, Ord Sp Rep..... 1 Trk, 4-ton, wrecker..... 2	Normally assigned to Army. Performs 3d Ech Maint for Approx 1,200 Veh under favorable condi- tions. Small-arms Sec capable of main- taining the equivalent of 1/3 the small arms of Inf Div. Wt (short tons): on wheels, 117 boxed, 135. Cubage (ship tons): on wheels, 828 boxed, 536.
19	Ord Maint Co Engr Sp Brig T/O 9-97S (7 Oct 44)	O..... 5 WO..... 1 EM.....87 Agg.....93	Tlr, 1-ton.....7 Trk, 1/4-ton.....1 Trk, 1 1/2-ton, cargo.....3 Trk, 2 1/2-ton, cargo.....7 Trk, 2 1/2-ton, Ord Sp Rep.....2	Performs 3d Ech Maint of Veh fire control, marine navigationa instruments, small arms and Arty for an Engr Sp Brig. Assign- ment: 1 per Brig. Includes 2-C and 7-EM for Brig Ord Sec.

164. ORDNANCE UNITS:

c. Service Force Units:

(1) Administrative Units:

1	2	3	4
Unit	Personnel	Vehicles	Remarks
2 Hq & Hq Det Ord Base Dep T/O & E 9-312 (8 Jun 43, Cl, 2)	O..... 8 WO..... 2 FM.....31 Agg.....41	Tlr, 1-ton.....1 Trk, 1/4-ton.....1 Trk, 3/4-ton, Comd.....1 Trk, 1 1/2-ton, cargo.....1 <i>Remarks—(Continued)</i> Normally this unit will be utilized to administer a Dep to serve a force with a total strength of 100,000 & over. Wt (short tons): on wheels, 21; boxed, 23. Cubage (ship tons): on wheels, 116; boxed, 101.	This unit provides the supervisory & Adm Pers for the Dep Ord Sec of a Com Z Base Gen Dep or a Com Z Branch Ord Dep. The Dep Ord Sec of a Com Z Base Gen Dep normally comprises 1 or more of the following units: Ord Base Armt Maint Bn (T/O 9-315) Ord Base Auto Maint Bn (T/O 9-325) Ord Bn, Hq & Hq Det (T/O 9-76) comprising 3 to 5 of the following units: Ord Am Co (T/O 9-17) Ord Evac Co (T/O 9-187) Ord Mtr Veh Distr Co (T/O 9-337) Ord Tire Rep Co (T/O 9-347) Ord Mtr Veh Assembly Co (T/O 9-348) Ord Base Dep Co (T/O 9-377)
3 Hq & Hq Det, Ord Bn T/O 9-76		See Par 164 b, line 8.	
4 Hq & Hq Co, Ord Base Depot T/O & E 9-620-1T (13 Sept 44)	O..... 29 WO..... 3 EM.....100 Agg.....132	Tlr, 1/4-ton.....2 Tlr, 1-ton.....1 Trk, 1/4-ton.....5 Trk, 3/4-ton, Wpn Carr.....1	Assignment: One per Gen or Branch Dep in Com Z. Provides Comd, Tech and Adm Pers for supervision of the Opn of an Ord branch or Ord Sec of a Base Gen Dep. Serves a force of 100,000 Trs or over.

(2) Supply Units:

5 Ord Base Dep Co T/O & E 9-367T (13 Sept 44)	O..... 8 WO..... 1 EM.....198 Agg.....207	Trk, 1/4-ton.....1 Trk, 3/4-ton, Wpn Carr.....1 Trk, 2 1/2-ton, cargo.....1 Trk, Hv, wrecker.....1	Assigned to Ord Base Dep or Ord Sec Base Gen Dep. Operates the Sup Div of a Dep and is capable of serving a balanced field force of 100,000 Trs.
6 Ord Base Dep Co T/O & E 9-377 (11 Oct 43, Cl)	O..... 6 EM.....111 Agg.....117	Trk, 1/4-ton.....1 Trk, 3/4-ton, Wpn Carr.....1 Trk, 2 1/2-ton, cargo.....1 Trk, Hv wrecking.....1 <i>Remarks—(Continued)</i> Wt (short tons): on wheels, 21; boxed, 23. Cubage (ship tons): on wheels, 116; boxed, 101.	Assigned 1 or more to Ord Base Dep as required. Handles Gen Ord Sup for a balanced force of about 30,000. Additional labor may be assigned from Gen pool or by use of local Civ labor. 1 Co organic to Ord Base Auto Maint Bn (T/O 9-325).

164. ORDNANCE UNITS:

c. Service Force Units:(2) *Supply Units (Continued):*

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
7	Ord Am Co T/O 9-17		See Par 164 b, line 10.	
8	Ord Evac Co T/O 9-187		See Par 164 b, line 12.	

(3) *Maintenance Units:*

9	Ord Base Armament Maint Bn T/O 9-315 (7 Sept 44)	O..... 24 WO..... 3 EM.....589 Agg.....616	Tlr, 1-ton.....2 Trk, 1/4-ton.....4 Trk, 3/4-ton, Wpn Carr.....4 Trk, 2 1/2-ton, cargo.....4 Trk, Hv, wrecking.....2	Consists of Hq & Sv Co. (T/O 9-316), Armd Veh Maint Co (T/O 9-317), Arty & Fire Control Maint Co (T/O 9-318), Small Arms Maint Co (T/O 9-319). Assigned as required in base shops in Com Z, usually 1 per Army & 1 per Armd Div. Performs 5th Ech Maint on all arms and Armd Veh. Component Cos cannot operate separately. Bn must operate as a whole.
10	Hq & Sv Co, Ord Base (Armament or auto- motive) Maint Bn T/O & E 9-316 (3 Jul 44)	O..... 10 WO..... 2 EM.....129 Agg.....141	Tlr, 1-ton.....2 Trk, 1/4-ton.....1 Trk, 3/4-ton, Wpn Carr.....1 Trk, 2 1/2-ton, cargo.....2 Trk, Hv wrecker.....1	1 per Ord Base Arm or Auto Maint En. (T/O 9-315, and T/O 9-325 respectively). Provides Agin, Gen overhead and Serv Pers for the Bn.
11	Ord Base Armd Veh Maint Co T/O & E 9-317 (7 Sept 44)	O..... 6 WO..... 1 EM.....241 Agg.....248	Tr, 1/4-ton.....1 Trk, 3/4-ton, Wpn Carr.....1 Trk, 2 1/2-ton, cargo.....1 Trk, Hv, wrecking.....1	1 per Ord Base Armt Maint Bn (T/O 9-315). Performs 5th Ech Maint on all types of Armd Veh. Cannot operate alone, must be in Bn.
12	Ord Base Arty & Fire Control Maint Co T/O & E 9-318 (7 Sept 44)	O..... 5 EM.....147 Agg.....152	Trk, 1/4-ton.....1 Trk, 3/4-ton, Wpn Carr.....1 Trk, 2 1/2-ton, cargo.....1	1 per Ord Base Armt Maint Bn (T/O 9-315). Performs 5th Ech Maint on Arty, fire-control instruments (general & AA) and remote control systems. Cannot operate alone, must be in Bn.

164. ORDNANCE UNITS:

c. Service Force Units:(3) *Maintenance Units (Continued):*

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
13	Ord Base Small Arms Maint Co T/O & E 9-319 (7 Sept 44)	O..... 3 EM.....72 Agg.....75	Trk, 1/4-ton.....1 Trk, 3/4-ton, Wpn Carr.....1	1 per Ord Base Armt Maint Bn. (T/O 9-315). Performs 5th Ech Maint on small arms. Cannot operate alone, must be in Bn.
14	Ord Base Automotive Maint Bn T/O 9-325 (23 Mar 43, C1)	O..... 31 WO..... 2 EM.....754 Agg.....787	Trk, 1/4-ton.....2 Trk, 3/4-ton, Wpn Carr.....9 Trk, 2 1/2-ton, cargo.....1 Trk, Hvy, wrecking.....1	Consists of Hq & Sv Co (T/O 9- 316), Base Dep Co (T/O 9-377), 2 Auto Maint Cos (Eng Rebuild) (T/O 9-327), Auto Maint Co (Power Tn Rebuild) (T/O 9-328). Assigned as required in base shops in Com Z, usually 1 per Army. Performs 5th Ech Maint includ- ing rebuilding, on all Auto Equip. Component Cos cannot operate sepa- rately. Bn must operate as a whole.
15	Ord Base Automotive Maint Co (Engine rebuild) T/O & E 9-327 (11 Oct 43, C1)	O..... 6 EM.....200 Agg.....206	Trk, 3/4-ton, Wpn Carr.....1	2 per Ord Base Auto Maint Bn. (T/O 9-325). Performs 5th Ech Maint by rebuilding standard Eng and subassemblies such as generators & pumps. Cannot operate alone, must be in Bn.
16	Ord Base Automotive Maint Co (Power Train Rebuild) T/O & E 9-328 (28 Oct 43)	O..... 4 EM.....139 Agg.....143	Trk, 3/4-ton, Wpn Carr.....1	1 per Ord Base Auto Maint Bn (T/O 9-325). Performs 5th Ech Maint by complete rebuilding of power Tn assemblies for reissue to 3d & 4th Ech shops. Cannot operate alone, must be in Bn.
17	Ord Maint Co Engr Sp Brig T/O & E 9-97S (7 Nov 44)	O..... 5 WO..... 1 EM.....87 Agg.....93	Tlr, 1-ton.....7 Trk, 1/4-ton.....1 Trk, 1 1/2-ton, cargo.....3 Trk, 2 1/2-ton, cargo.....7 Trk, Ord Sp Rep.....2	Organic to Engr Sp Brig. Performs 3d Ech Maint and Sup for Mtr Veh, fire control & marine navigation instruments, small small arms & Arty. Includes O-2 & EM-7 for Brig Ord Sec.

164. ORDNANCE UNITS:

c. Service Force Units:(3) *Maintenance Units (Continued):*

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
18	Ord Tire Repair Co T/O & E 9-347 (17 May 44, 9-347 C1)	O..... 5 EM.....140 Agg.....145	Trk, 1/4-ton.....1 Trk, 3/4-ton, Wpn Carr.....2 Trk, 1 1/2-ton.....1	Assigned as required to Ord Base Dep. Operates 2 complete tire rebuilding & vulcanizing shops. Performs retreading & sectional repairs. Under average conditions will serve 30,000 to 40,000 Veh. repairs. Under average conditions Equip capacity equals 130 retreads & 350 sectional repairs per day. Wt (short tons): on wheels, 10, boxed, 11. Cubage (ship tons): on wheels, 53; boxed, 42.
19	Ord Mtr Veh Assembly Co (Portable) (T/O & E 9-348 (17 May 44, C1)	O..... 6 EM.....173 Agg.....179	Tlr, 1-ton, cargo..... 3 Tlr, 5, 6-ton, cargo..... 5 Trk, 1/4-ton..... 1 Trk, 3/4-ton, Wpn Carr..... 1 Trk, 2 1/2-ton, cargo.....12 Trk, Ord, Sp Rep..... 2 Trk, Hv, wrecker..... 2	As required in Com Z, usually 1 per Army. Located near PD. Assemblies & services Veh for Distrib to field units. Capacity 25 Veh per day in twin unit packs or 75 per day in single unit packs. Can perform 3d Ech Maint for from 1200 to 1500 wheeled Veh. Wt (short tons): on wheels, 192, boxed, 211. Cubage (ship tons): on wheels, 1,032; boxed, 865.
20	Ord Mtr Veh Distributing T/O & E 9-337 (10 Aug 44, C1)	O..... 4 EM.....160 Agg.....164	Trk, 1/4-ton..... 7 Trk, 2 1/2-ton, cargo.....10	Assigned to Com Z Dep as required, usually 1 per Mtr Veh Assembly Co. Distributes motor vehicles to Fwd units & establishments. Wt (short tons): on wheels, 75; boxed, 83. Cubage (ship tons): on wheels, 476, boxed, 335.

164. ORDNANCE UNITS:

d. Ordnance Service Organization, T/O & E 9-500 (14 Oct 44 C1).
(Detachments from this organization are grouped as required into Ordnance Service Battalions, Companies, Platoons, or Detachments.)

(1) *Administrative Units:*

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
2	HEADQUARTERS:			
	AA	O.....1		1 per 2 or more teams, except that
	Plat Hq	EM.....1		Plat strength shall not aggregate
		Agg.....2		less than 40 when an integral
				part of a Co. Not required when
				including commissioned Pers.
	AB	O.....1	Tlr, 1/4-ton.....1	Teams of total aggregate of not
	Plat Hq	EM.....4	Trk, 3/4-ton, Wpn Carr.....1	less than 40.
	(Separate)	Agg.....5		
	AC	O.....2	Tlr, 1/4-ton.....2	1 per 2 or more Plats, except the
	Co Hq	EM.....8	Tlr, 1-ton, 250-gal water	Co strength shall not be less than
		Agg.....10	tank.....1	100 aggregate.
			Trk, 1/4-ton.....1	
			Trk, 3/4-ton, Wpn Carr.....1	
			Trk, 2 1/2-ton, cargo.....1	
	AD	O.....4	Tlr, 1/4-ton.....1	1 per 3 to 6 Cos.
	Bn Hq	EM.....13	Trk, 1/4-ton.....1	
		Agg.....17	Trk, 3/4-ton, Wpn Carr.....1	
	AE	O.....8	Tlr, 1/4-ton.....2	For Dep of capacity to Sv Approx
	Hq Ord	EM.....23	Tlr, 1-ton.....1	10,000 to 25,000 Trs.
	Base Dep	Agg.....31	Trk, 1/4-ton.....3	
			Trk, 3/4-ton, Wpn Carr.....1	
			Trk, 2 1/2-ton, cargo.....1	
	AF	O.....11	Tlr, 1/4-ton.....2	For Dep of capacity to Sv Approx
	Hq Ord	WO.....1	Tlr, 1-ton.....1	25,000 to 100,000 Trs.
	Base Dep	EM.....33	Trk, 1/4-ton.....3	
		Agg.....45	Trk, 3/4-ton, Wpn Carr.....1	
			Trk, 2 1/2-ton, cargo.....1	
	AN	O.....1	Tlr, 1/4-ton.....1	Provides Pers for Adm and Tech
	Hq Team	EM.....2	Trk, 1/4-ton.....1	supervision for 8 to 10 bomb dis-
		Agg.....3		posal Dets. Assigned as required
				in Com Z. Normally employed in
				in Adv Sec.
3	MESS TEAMS:			
	AG	EM.....4		1 per 40 to 100 men.
	AH	EM.....6		1 per 101 to 175 men.
	AI	EM.....8		1 per 176 to 225 men.
	AJ	EM.....9		1 per 226 to 275 men.
	AK	EM.....11		1 per 276 to 325 men.
4	AUTO MECHANIC TEAMS:			
	AL	EM.....1		Performs 2d Ech Maint for 15 Vehs.
	AM	EM.....2		Performs 2d Ech Maint for 30 Vehs.

164. ORDNANCE UNITS:

d. Ordnance Service Organization T/O & E 9-500 (Continued) :

(2) Supplies, Vehicle Distribution & Recovery, Service:

1	2	3	4
Unit	Personnel	Vehicles	Remarks
5	GENERAL SUPPLY TEAMS:		
CA	O..... 1 EM.....17 Agg.....18	Trk, 2½-ton, cargo.....1	Can Sup Approx 2,500 men (or 4-ton/day).
CB	O..... 1 EM.....25 Agg.....26	Trk, 2½-ton, cargo.....1	Can Sup Approx 4,500 men (or 7-ton/day).
CC	O..... 1 EM.....36 Agg.....37	Trk, 2½-ton, cargo.....1	Can Sup Approx 6,000 men (or 12-ton/day).
CO	EM.....10	Tlr, 1-ton.....1 Trk, 2½-ton, cargo.....1	Can Sup Approx 1,250 men (or 2-ton/day).
6	AMMUNITION SUPPLY TEAMS:		
CD	WO..... 1 EM.....15 Agg.....16	Tlr, ¼-ton.....1 Tlr, 1-ton.....1 Trk, 2½-ton, cargo.....1	Can Sup Approx 2,000 men (or 50-ton/day).
CE	O..... 1 EM.....22 Agg.....23	Tlr, ¼-ton.....1 Tlr, 1-ton.....1 Trk, ¼-ton.....1	Can Sup Approx 3,500 men (or 90-ton/day).
CF	O..... 1 EM.....26 Agg.....27	Trk, 2½-ton.....1 Tlr, ¼-ton.....1 Tlr, 1-ton.....2 Trk, ¼-ton.....1 Trk, 2½-ton, cargo.....2	Can Sup Approx 5,000 men (or 150-ton/day).
7	VEHICLE DISTRIBUTION TEAMS:		
CG	O..... 1 EM.....36 Agg.....37	Trk, ¼-ton.....1	Distr Veh from Ord Base to CZ.
CH	O..... 1 EM.....71 Agg.....72	Trk, ¼-ton.....1	
8	VEHICLE EVACUATION TEAMS:		
CJ	O..... 1 EM.....27 Agg.....28	Semi-Tlr, 45-ton.....1 Trk, ¼-ton.....1 Trk, 2½-ton, cargo.....2 Trk-Trac, M26A1.....1 Trk, Hv wrecker.....1 Veh, Tank Rec, M37.....1	
CK	O..... 1 EM.....48 Agg.....49	Semi-Tlr, 45-ton.....2 Trk, ¼-ton.....1 Trk, 2½-ton, cargo.....2 Trk-Trac, M26A1.....2 Trk, Hv wrecker.....2 Veh, Tank Rec, M32.....2	

164. ORDNANCE UNITS:

d. Ordnance Service Organization T/O & E 9-500:

(2) Supplies, Vehicle Distribution & Recovery Service (Continued):

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
9	SERVICE TEAMS:			
	CL	EM.....16	Trk, ¾-ton, Wpn Carr.....1 Trk, 2½-ton, cargo.....1	Capable of providing Sv facilities for Approx 2,500 men. Capable of providing Sv facilities for Approx 4,500 men.
	CM	EM.....21	Tlr, 1-ton.....1 Trk, ¾-ton, Wpn Carr.....1 Trk, 2½-ton, Mach Shop.....1	
	CN	O.....1 EM.....36 Agg.....37	Trk, 4-ton, wrecker.....1 Trk, ¾-ton.....1 Trk, ¾-ton, Wpn Carr.....1 Trk, 2½-ton, Mach Shop.....1 Trk, Hv wrecker.....1	Capable of providing Sv facilities for Approx 6,000 men.

(3) Maintenance:

10	AUTOMOTIVE TEAMS:			
	DA	O.....1 EM.....28 Agg.....29	Tlr, ¼-ton.....1 Tlr, 1-ton.....3 Trk, ¼-ton.....1 Trk, ¾-ton, Wpn Carr.....1 Trk, 2½-ton, cargo.....3	Capable of Maint Approx 420 Veh.
	DB	O.....2 EM.....43 Agg.....45	Tlr, ¼-ton.....1 Tlr, 1-ton.....4 Trk, ¼-ton.....1 Trk, ¾-ton, Wpn Carr.....1 Trk, 2½-ton, cargo.....4	Capable of Maint Approx 600 Veh
11	ARTILLERY TEAMS:			
	DC	O.....1 EM.....7 Agg.....8	Tlr, ¼-ton.....1 Trk, ¾-ton, Wpn Carr.....1 Trk, 2½-ton, cargo.....1	Can Maint Approx 20 Arty pieces.
	DD	O.....1 EM.....12 Agg.....13	Tlr, ¼-ton.....1 Trk, ¾-ton, Wpn Carr.....1 Trk, 2½-ton, cargo.....1	Can Maint Approx 45 Arty pieces.
	DE	O.....1 EM.....19 Agg.....20	Tlr, ¼-ton.....1 Trk, ¼-ton.....1 Trk, 2½-ton, cargo.....2	Can Maint Approx 90 Arty pieces.
12	DF AA Arty (Maint) Tm	O.....1 EM.....19 Agg.....20	Trk, ¾-ton, Wpn Carr.....2 Trk, 2½-ton, instrument repair load.....1	One per 2 to 3 Bns of AAA.
13	SMALL ARMS DG	TEAMS: EM.....5	Trk, ¾-ton, Wpn Carr.....1	Capable of Maint Approx 4,500 small arms.
	DH	EM.....8	Trk, 2½-ton, Small Arms repair.....1	Capable of Maint Approx 7,000 small arms.
14	DI Instrument Repair Tm	EM.....13	Trk, ¾-ton, Wpn Carr.....1 Trk, 2½-ton, instrument repair load.....1	

164. ORDNANCE UNITS:

d. Ordnance Service Organization T/O & E 9-500 (Continued) :

(4) Miscellaneous:

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
15	EA Mbl Tire Repair Tm	O..... 1 EM.....15 Agg.....16	Tlr, 1-ton, tire repair load A..1 Tlr, 1-ton, tire repair load B..1 Trk, 1/4-ton.....1 Trk, 1 1/2-ton.....2 Trk, 2 1/2-ton, cargo.....2 Trk, 2 1/2-ton, tire repair load A.....1 Trk, 2 1/2-ton, tire repair load B.....1	Capable of making 59 sectional and 45 spot tire Reps and 200 tube Reps per day. Also operates tire inspection and exchange Sv.
16	EB Bomb Disp Sqd	O..... 1 EM..... 6 Agg..... 7	Tlr, 1-ton.....1 Trk, 3/4-ton, Wpn Carr.....1 Trk, 2 1/2-ton, cargo.....1	Locates and renders safe unexploded bombs, mines and shells. 1 per 30,000 Trs. 1 per airfield and port.
17	EC Am Reno- vating Plat	O..... 2 EM.....66 Agg.....68	Tlr, 1/4-ton.....3 Trk, 1/4-ton.....2 Trk, 3/4-ton, Wpn Carr.....3	
18	FD Ballistic Tech Sv Tm	O..... 2 EM.....11 Agg.....13	Tlr, 1/4-ton.....1 Tlr, 1-ton.....1 Trk, 1/4-ton.....1 Trk, 1 1/2-ton.....1	
19	EE Fuze Tm	O..... 3 EM..... 6 Agg..... 9	Tlr, 1/4-ton.....3 Trk, 1/4-ton.....3	To instruct and supervise army and Corps Trs in the use, handling, identification, and Distr of new fuzes.
20	EF Reclamation Tm	O..... 2 EM.....63 Agg.....65	Trk, 1/4-ton.....2 Trk, 2 1/2-ton, cargo.....2 Trk, Hv wrecker.....1	Operates a shop as part of a base Dep. Receives all Ord Equip returned as Salv.

■ 165. QUARTERMASTER UNITS:

a. Air Force Units:

(1) *Administrative Units:*

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
2	Hq & Hq Det, QM Bn, Mbl T/O & E 10-56 (3 May 44, C1)	O..... 4 WO..... 2 EM.....21 Agg.....27	Tlr, 1-ton.....1 Trk, 1/4-ton.....2 Trk, 3/4-ton, Wpn Carr.....1 Trk, 2 1/2-ton, cargo .....1	Provides Pers for Contl and Adm of 2-6 QM Trk Cos. Assigned as required.

(2) *Supply Units:*

3	QM Plat Air Dep Gp T/O & E 10-427 (2 Jan 45)	O..... 2 EM.....23 Agg.....25	Trk, 1/4-ton.....1 Trk, 3/4-ton, Wpn Carr.....1 Trk, 2 1/2-ton, cargo.....1	Provides all types of QM Sups for local Trs in the AF Gen Dep area.
4	QM Co, Am Sv Gp T/O & E 10-437 (2 Jan 45)	O..... 3 EM.....76 Agg.....81	Trk, 3/4-ton, Wpn Carr.....4	Provides same Svcs as T/O & E 10- 437 RS (see line 5). Serves 1 C Gp.
5	QM Co Sv Gp Avn (RS) T/O 10- 437-RS (2 Jan 45)	O..... 3 EM.....55 Agg.....58	Trk, 3/4-ton, Comd.....1 Trk, 3/4-ton, Wpn Carr.....3	Sv Cen Sup Sec, Cl I Sup Sec, 2 Cl III Sup Secs. Tech and Adm Pers for Opn of QM Sup in T of Opns. Handles all Cl of QM Sup. Re- ceives Sup from Air Deps or from Grd SP and distributes to Distr Pts in local area. Labor by QM Sv. Serves 2 C Gps.
6	QM Dep Subs Co (Avn) T/O & E 10-477 (17 Sep 43, C1)	O..... 3 EM.....54 Agg.....57	Trk, 1/4-ton.....2 Trk, 3/4-ton, Wpn Carr.....2 Trk, 2 1/2-ton, cargo.....2	Dep Hq, Storage Sec. Adm and Tech unit for Opn of QM Sub- sistence Dep for AF Trs in T of Opns. Not established where Grd force SPs available. Capacity: Maint 25,000 men. Additional labor from QM Sv Units.

(3) *Transportation Units:*

7	QM Trk Co (Avn) T/O & E 10-517 (18 Aug 43, C1)	O..... 3 EM..... 99 Agg.....102	Tlr, water tank (250 gal).... 3 Tlr, 1-ton, cargo.....50 Trk, 1/4-ton..... 3 Trk, 3/4-ton, Wpn Carr..... 2 Trk, 2 1/2-ton, cargo.....51 Trk, 2 1/2-ton, wrecker..... 1	2 Plats, each of 2 Secs. Assigned to AF Instls on basis of ton-miles required. Has 48 Trks and Tlrs for Gen use. Substitute Equip: Trk Tank 750-gal; or Trk, Trac, 4 to 5 tons with semi-Tlrs, com- bination Anl and Cargo.
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165. QUARTER MASTER UNITS:

a. Air Force Units:(3) *Transportation Units (Continued):*

1	1 Unit	2 Personnel	3 Vehicles	4 Remarks
8	Trk Plat Avn (Sep) T/O & E 10-518 (2 Jan 45)	O..... 2 EM.....54 Agg.....56	Tlr, water tank (250 gal).... 1 Tlr, 1-ton.....25 Trk, 1/4-ton..... 2 Trk, 3/4-ton, Wpn Carr..... 1 Trk, 2 1/2-ton, cargo.....27	Trans Trs and Sups of all kinds. Evac Adrms when necessary. Capacity; w/Tlrs, 84 tons; w/o Tlrs, 60 tons. Substitute Equip: Trk Tk, 750 gal; or Trk Trac, 4-5 tons with Semi-Tlr.
9	QM Car Co T/O & E 10-87	See Par 165 b, line 11.		

(4) *Petroleum Unit:*

10	QM Dep Co, Cl III (Avn) T/O & E 10-467 (9 Oct 43, Cl)	O..... 2 EM.....30 Agg.....32	Trk, 1/4-ton.....1 Trk, 3/4-ton, Wpn Carr.....1 Trk, 2 1/2-ton, cargo.....1	Dep Hq Sec, Storage Sec. Adm and Tech Pers for Opn of QM Cl III Dep for AAF Trs. Not established when Grd force SPs available. Additional labor, when required, provided by QM Sv Units.
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(5) *Service Unit:*

11	QM Sv Co T/O & E 10-67	See Par 165 c, line 26.		
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b. Ground Force Units:(1) *Organic Units:*

2	Airborne QM Co T/O 10-327T (16 Dec 44)	O..... 5 EM.....82 Agg.....87	See Par 113	1 per Abn Div. Incl 1 Trk Plat Abn and 3 Trk Plats Rr Ech.
3	QM Co Inf Div T/O & E 10-17 (19 Feb 44, Cl)	O..... 10 EM.....176 Agg.....186	See Par 121	1 per Inf Div. Wt (short tons): on wheels, 306; boxed, 374. Cubage (ship tons): on wheels, 2,545; boxed, 1,737.

165. QUARTERMASTER UNITS:

b. Ground Force Units (Continued):

(2) Administrative Units:

1	2	3	4
Unit	Personnel	Vehicles	Remarks
4 Hq & Hq Det, QM Gp T/O & E 10-22 (4 Jan 45)	O.....10 EM.....25 Agg.....35	Tlr, ¼-ton.....2 Trk, ¼-ton.....5 Trk, ¾-ton, Wpn Carr.....2	1 per 2 or more QM Bns. Provides Comd agency for planning, supervising and coordinating the Opn, Tng, Adm and Sup of QM units Atchd or assigned to the Gp.
5 Hq & Hq Det, QM Bn Mbl T/O & E 10-56 (3 May 44)	O..... 3 WO..... 2 EM.....14 Agg.....19	Tlr, 1-ton.....1 Trk, ¼-ton.....2 Trk, ¾-ton, Wpns Carr.....1 Trk, 2½-ton, cargo.....1	Provides the necessary Pers for the Contl and Adm of 2 to 6 QM Trk Cos.
6 Hq & Hq Det, QM Bn T/O & E 10-536	See Par 165 c, line 3.		

(3) Supply Units:

7 QM Dep Co Sup T/O & E 10-227 (7 Mar 45)	O..... 8 EM.....178 Agg.....186	Tlr, 1-ton, cargo.....3 Trk, ¼-ton.....1 Trk, ¾-ton, Wpn Carr.....1 Trk, 2½-ton, cargo.....3	Office of Dep Comdr, Co Hq, 3 Dep Plats. Provides Adm and Tech Pers for Opn of a QM Sup Dep in a T of Opns. With normal attachment of 1 QM Trk Co and 2 QM Sv Cos can maintain 60,000 men. Wt (short tons): on wheels, 22; boxed, 26. Cubage (ship tons): on wheels, 126; boxed, 120.
8 QM Rhd Co T/O & E 10-197 (17 Feb 45)	O..... 4 EM.....173 Agg.....177	Tlr, 1-ton.....2 Trk, ¼-ton.....4 Trk, 2½-ton, cargo.....2 <i>Remarks—(Continued)</i> Wt (short tons): on wheels, 19; boxed, 21. Cubage (ship tons): on wheels, 116; boxed, 93.	Operates Rhds or Trkhds to receive, break down and issue Cl I, II, III and IV Sups and Evac Salv. Capacity, 30,000 men. Can operate 2 Rhds serving 15,000 ea or 4 Rhds serving 7,500 ea. Has 1,600 5-gal gas cans.
9 QM Sales Co, Mbl T/O & E 10-157	See Par 165 c, line 9.		
10 QM Bkry Co T/O & E 10-147	See Par 165 c, line 10.		

165. QUARTERMASTER UNITS:

*b. Ground Force Units (Continued) :**(4) Transportation Units:*

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
11	QM Car Co T/O 10-87 (1 Aug 44)	O..... 5 EM.....124 Agg.....129	Tlr, 1-ton, cargo..... 1 Trk, 1/4-ton.....44 Trk, 3/4-ton, Wpn Carr.....46 Trk, 2 1/2-ton, cargo..... 1	Provides passenger Trans for the Hq to which Atchd. Wt (short tons): on wheels, 174 boxed, 204. Cubage (ship tons): on wheels 1,242; boxed, 940.
12	QM Pk Tr (Co) T/O 10-118 (26 Sep 44, C1, 2)	O..... 2 EM.....75 Agg.....77	None	4 Plats. Provides Gen cargo Trans Capacity: 20 tons. 4 horses, bell; 5 horses, riding; 217 mules, pack; 75 mules, riding. (200 pack mule available for Gen hauling.)
13	QM Trk Co T/O & E 10-57 (6 Jul 44, C1, 2)	O..... 5 EM.....105 Agg.....110	Tlr, 1-ton, cargo.....49 Trk, 1/4-ton..... 4 Trk, 3/4-ton, Wpn Carr..... 1 Trk, 2 1/2-ton, cargo.....50	3 Plats each of 2 2-Sqd Secs. As signed to CZ and Com Z on basis of ton-miles required. Has 49 Trks and Tlrs for Gen use. Wt (short tons): on wheels, 309. boxed, 378. Cubage (ship tons): on wheels 2,327; boxed, 1,759.
14	QM Tr T Bn T/O & E None	O..... 34 WO..... 2 EM.....651 Agg.....687	Tlr, 1-ton, cargo.....294 Trk, 1/4-ton..... 26 Trk, 3/4-ton, Comd..... 1 Trk, 3/4-ton, Wpn Carr..... 6 Trk, 2 1/2-ton, cargo.....301	Hq & Hq Det, QM Bn, Mbl (T/C 10-56) plus 6 QM Trk Cos (T/C 10-57). Used to Mtz Inf Divs. Has 288 Trks, 2 1/2-ton, cargo and 288 Tlrs, 1-ton cargo, for Gen use.

(5) Maintenance Units: See Par 165 c, lines 17 and 19.*(6) Miscellaneous Units:* See Par 165 c lines 22 to 27.

15	QM War Dog Plat T/O & E 10-397T (24 Jan 44)	O..... 1 EM.....20 Agg.....21	None	Pers and Anls for Tng and Op of co-ordinated man-dog Msg. teams and man-dog scout teams (24 war dogs; 6 Msgr, 18 scout.) To be Atchd to using unit for Adm and mess.
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165. QUARTERMASTER UNITS:

c. Service Force Units:

(1) Administrative Units:

1	2	3	4
Unit	Personnel	Vehicles	Remarks
2 Hq & Hq Co QM Base Dep T/O & E 10-520-1 (11 Aug 43)	O..... 34 WO..... 2 EM.....118 Agg.....154	Trk, 1/4-ton.....4 Trk, 3/4-ton, Comd.....2 Trk, 3/4-ton, Wpn Carr.....1 <i>Remarks—(Continued)</i> Wt (short tons): on wheels, 6; boxed, 7. Cubage (ship tons): on wheels, 43; boxed, 32.	Provides supervisory and Adm Pers for Dep QM Sec of Com Z Base Gen Dep of a Com Z Branch QM Dep. Necessary QM units Atchd as needed. Will administer Dep serving 100,000. The QM Sec of a Com Z base Gen Dep normally comprises 1 or more of following units: QM Base Dep Co; Ref Co, Fixed; Salv Rep Co; Base Pet Sup Co; Ldry Co; Bkry Co; Gr Reg Co, all operating under the Dep QM. A base Gen Dep will usually have both a Dep QM and a Sta QM. The Sta QM furnishes local QM Sv for the Dep, and may have QM Trk and Sv Units and a QM Base Dep Sup & Sales Co.
3 Hq & Hq Det, QM Bn T/O & E 10-536 (1 Jan 43, C1)	O..... 3 WO..... 2 EM.....12 Agg.....17	Tlr, 1/4-ton.....2 Tlr, 1-ton.....1 Trk, 1/4-ton.....2 Trk, 2 1/2-ton, cargo.....1	Assigned on basis of 1 per 3 to 6 QM Cos. QM Bns may contain like Cos, or may consist of any combination of types. Supervises Adm Tng. Sup and Opn of Cos Atchd or assigned to the Bn ac- cording to Sit. Wt (short tons): on wheels, 4; boxed, 4. Cubage (ship tons): on wheels, 19; boxed, 17.
4 Hq & Hq Det, QM Bn Mbl T/O & E 10-56	See Par 165 b, line 5.		
5 Hq & Hq Det, QM Gp T/O & E 10-22	See Par 165 b, line 4.		

165. QUARTERMASTER UNITS:

*c. Service Force Units (Continued):**(2) Supply Units:*

1	2	3	4
Unit	Personnel	Vehicles	Remarks
6 QM Base Dep Co T/O 10-367 (26 Oct 43, C1)	O..... 4 EM.....72 Agg.....76	Trk, ¾-ton, Wpn Carr.....1	Clothing & equipage Sec; Gen Sups Sec and a subsistence Sec. Furnishes Tech Pers for receipt, storage, and issue of Cl I, II & IV QM Sups and provides additional Pers to augment Hq & Hq Co QM Base Dep. Operates only in conjunction with Hq & Hq Co, QM Base Dep. Capacity: Serve 100,000 Trs.
7 QM Base Dep Sup & Sales Co T/O 10-387 (6 Nov 43)	O..... 10 EM.....126 Agg.....136	Tlr, 1-ton, cargo.....1 Trk, 2½-ton, cargo.....1	Co Hq, Sup Plat and Sv Plat. Furnishes all classes Sup and retail sales facilities for all components of a Gen or branch Dep, provides Pers to supervise labor & Mts pools. One to each Gen Dep, port, or as required in Com Z. For Deps serving less than 100,000 Trs, appropriate Colms 10-500 will apply.
8 QM Ref Co, Fixed T/O & E 10-217 (30 Jul 43, C1, 2, 3)	O..... 5 EM.....137 Agg.....142	Trk, ¼-ton.....1 <i>Remarks—(Continued)</i> Wt (short tons): on wheels, 5; boxed, 6. Cubage (ship tons): on wheels, 27; boxed, 21.	Operates cold storage warehouses and ice plants to serve 120,000 men. Consists of Hq Plat, cold storage Plat, and butchery Plat when slaughterhouse is to be operated. Meat, 30 days stock.....2,500 tons Perishables, 30 days stock.....1,500 tons
9 QM Sales Co, Mbl T/O & E 10-157 (28 May 43, C1)	O..... 4 EM.....174 Agg.....178	Tlr, 1-ton.....13 Trk, ¼-ton..... 4 Trk, ¾-ton, Wpn Carr..... 1 Trk, 2½-ton, cargo.....13	3 Plats, 4 Secs ea. Provides and distributes sales articles. Capacity: Sales per day— Sec: 10,000 Trs. Plat: 40,000 Trs. Co: 120,000 Trs. Wt (short tons): on wheels, 86; boxed, 104. Cubage (ship tons): on wheels, 630; boxed, 469.
10 QM Bkry Co T/O & E 10-147 (6 Oct 44)	O..... 5 EM.....155 Agg.....160	Tlr, ¼-ton, cargo.....5 Tlr, 1-ton, cargo.....1 Tlr, 1-ton, 250 Gal, water tank.....1 Trk, ¼-ton, cargo.....5 Trk, ¾-ton, Wpn Carr.....2 Trk, 2½-ton, cargo.....2	4 Plats of 4 Secs each. Each Sec can operate independently. Max Capacity: Sec: 2,000 lbs. Plat: 6,000 Lbs. Co: 32,000 Lbs. Wt (short tons): on wheels, 22; boxed, 24. Cubage (ship tons): on wheels, 96; boxed, 78.

165. QUARTERMASTER UNITS:

c. Service Force Units:

(2) *Supply Units (Continued):*

1	2	3	4
Unit	Personnel	Vehicles	Remarks
11 QM Rmt Tr T/O & E 10-97 (22 Jan 44)	O..... 5 EM.....146 Agg.....151	Tlr, 1-ton, cargo.....1 Tlr, 1½-ton, 2-horse.....1 Trk, ¼-ton.....1 Trk, ¾-ton, Wpn Carr.....1 Trk, 2½-ton, cargo.....2 Wagon, escort.....8	Tr Hq and Dep Div consisting of Dep Hq Sv and Guard Plat, and Tng Plat. Operates Fed Rmt Dep with capacity of 400 Anls. Assign- ment dependent on requirements ments of T of Opns. Wt (short tons): on wheels, 49; boxed, 53. Cubage (sbip tons): on wheels, 316; boxed, 228.

(3) *Transportation Units:*

12 QM Trk Co (Hv) or Petroleum T/O & E 10-37 (11 Aug 44)	O..... 5 EM.....112 Agg.....117	Trk, ¼-ton..... 4 Trk, ¾-ton, Wpn Carr..... 1 Trk, 2½-ton, cargo..... 2 Trk, 4-ton, Wrecker..... 1 Trk, 5-ton, 4x2 Trac.....48 {Semi-Tlr, 10-ton Stake & Platform.....96} or {Trk, 4- to 5-ton 4x4 Trac.....48} {Semi-Tlr, 2,000-gal gas tank.....48} Trk, 1-ton, cargo..... 2	Designated QM Trk Co (Hv) when equipped with stake and plat- form Tlr. Hauls freight when lighter Equip not economical. For use on good Rds, more eco- nomical on long bauls. Capacity: 384 tons: When dolly for dual Tlr can be used, 576 tons. Designated QM Trk Co (Petrol- eum) when equipped with 2,000 gal gas tanks. Capacity: 960 gal bulk petroleum.
13 QM Ref Co, Mbl T/O & E 10-247 (25 Feb 44, C1)	O..... 4 EM..... 99 Agg.....103	Semi-Tlr, Ref.....30 Tlr, 1-ton, cargo..... 2 Trk, ¼-ton..... 4 Trk, ¾-ton, Wpn Carr..... 3 Trk, 2½-ton, cargo..... 2 Trk, 4-, 5-ton, Trac.....30 Trk, 4-ton, wrecker..... 1	3 Plats, each of 3 Secs. Refriger- ated Mtr Trans of perishable Sup. Has 30 units for Gen use. Can handle Sup needs for 135,000 men. 1 Sec serves 1 Div. Wt (short tons): on wheels, 205 boxed, 241. Cubage (sbip tons): on wheels 1,709; boxed, 1,685.
14 QM Car Co T/O & E 10-87	See Par 165 b, line 11.		
15 QM Trk Co T/O & E 10-57	See Par 165 b, line 13.		
16 QM Trk Bn T/O & E None	See Par 165 b, line 14.		

165. QUARTERMASTER UNITS:

c. Service Force Units (Continued):(4) *Repair and Maintenance Units:*

1	2	3	4
Unit	Personnel	Vehicles	Remarks
17 QM Salv Rep Co (Sem) T/O & E 10-237 (6 Jul 43, C1, 2, 3)	O..... 3 EM.....198 Agg.....201	Semi-Tlr, van.....6 Tlr, 1-ton.....3 Trk, ¼-ton.....1 Trk, ¾-ton, Wpn Carr.....1 Trk, 2½-ton, cargo.....3 Trk, 4-, 5-ton, Trac.....2	2 Plats, each of 1 Shoe Rep Sec, 1 Clothing Rep Sec, and 1 Textile Rep Sec. Provides Rep Elm of a Salv Dep Instl. With Bn Hq Det, a Ldry Co, a F & B Co, constitutes a QM Salv Rep Bn Sem and can take care of 50,000 men. Wt (short tons): on wheels, 36; boxed, 41. Cubage (ship tons): on wheels, 208; boxed, 182.
18 QM Salv Rep Co Fixed T/O 10-317 (5 Nov 43, C1)	O..... 14 EM.....203 Agg.....217	Tlr, 1-ton, cargo.....1 Trk, 1½-ton.....1 <i>Remarks—(Continued)</i> Estimate labor requirements: Clothing Rep, 256, shoe, leather & rubber Rep, 130, canvas and webbing Rep, 100, machinery and metal, 50.	Furnishes Adm, Tech and other overhead Pers for Opn of fixed Salv Rep Instls. Operates only in conjunction with Hq & Hq Co, QM Base Dep T/O & E 10-520-1, Labor from Dep labor pool, Trans from Dep Trans pool. Capacity: Handle Salv from 100,000 Trs when operating in two shifts.
19 QM Ldry Co Sem T/O & E 10-167 (21 Apr 44, C1)	O..... 5 EM.....265 Agg.....270	Semi-Tlr, van, Ldry.....16 Tlr, 1-ton, cargo.....6 Trk, ¼-ton.....5 Trk, ¾-ton, Wpn Carr.....1 Trk, 2½-ton, cargo.....6 Trk, 4-, 5-ton, Trac.....4	4 Plats. Capacity: 48,000 men. A Plat can operate independently. Wt (short tons): on wheels, 136; boxed, 162. Cubage (ship tons): on wheels, 1,485; boxed, 1,092.

(5) *Petroleum Units:*

20 QM Base Petroleum Sup Co T/O & E 10-377 (29 Jul 44)	O..... 5 EM.....139 Agg.....144	Tlr, 1-ton.....9 Trk, ¼-ton.....2 Trk, ¾-ton, Wpn Carr.....3 Trk, 2½-ton, cargo.....8	Co Hq, Dep Sec & 3 Opn Plats. Receives and stores petroleum products at Com Z Dep, tank farms or petroleum pipeline terminals; supervises Distr of bulk Gas and lubricants to canning Pts, cleans and fills cans from bulk Sup. Maintains Res 100,000 Gal Gas in 5-Gal cans and 15 tons oil & grease, cleans and fills 20,000 5-Gal cans daily from bulk storage.
21 QM Gas Sup Co T/O & E 10-77 (21 Jun 45)	O..... 3 EM.....125 Agg.....128	Tlr, 1-ton, cargo.....21 Trk, ¼-ton.....3 Trk, ¾-ton, Wpn Carr.....5 Trk, 2½-ton, cargo.....21	2 Plats, each of 2 Secs. Assigned for Distr of Gas, oil and lubricants. Has 4 Gas dispensers and carrying capacity for 16,000 Gal Gas in 5-Gal drums. Wt (short tons): on wheels, 139; boxed, 168. Cubage (ship tons): on wheels, 1,030; boxed, 780.

165. QUARTERMASTER UNITS:

c. Service Force Units (Continued):

(6) General Service and Miscellaneous Units:

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
22	QM Gr Reg Co T/O & E 10-297 (6 Nov 43, C1, 2)	O..... 6 EM.....119 Agg.....126	Tlr, ¼-ton, cargo..... 5 Tlr, 1-ton, cargo..... 5 Trk, ¼-ton..... 5 Trk, ¾-ton, Wpn Carr.....12 Trk, 2½-ton, cargo..... 1 <i>Remarks—(Continued)</i> Wt (short tons): on wheels, 91; boxed, 107. Cubage (ship tons): on wheels, 586; boxed, 502.	Co Hq and 4 Plats, each of 3 Secs. Assigned on basis of 1 Plat per C Div, or 1 Co per Corps of 3 Divs. Supervises Ident and burial of dead, Coll and disposi- tion of personal effects, Loc and Reg of battlefield Gvs and Cem. Additional labor from QM Sv units.
23	QM Gr Reg Co T/O & E 10-298 (26 Sep 44)	O..... 5 EM.....247 Atchd Med.. 13 Agg.....265	Tlr, 1-ton, cargo.....23 Trk, ¼-ton..... 4 Trk, ¾-ton, Wpn Carr..... 3 Trk, 2½-ton, cargo.....23	Coll, Evacs and Ident battlefield dead; Coll personal effects, Loc and Reg battlefield Gvs and Cem, supervises interment. 3 Plats, basis of assignment: 1 Plat per Div. 1 Sec per RCT.
24	QM Salv Coll Co T/O & E 10-187 (23 Jun 43)	O..... 4 EM.....200 Agg.....204	Tlr, 1-ton, cargo..... 7 Trk, ¼-ton..... 1 Trk, 2½-ton, cargo.....14 Trk, 4-ton, wrecker..... 3	3 Plats, each of 2 2-Sqd Secs; also Atchd Ord, Cml and Sig Pers. Coll, receipt and basic classifica- tion of all CI of Salv at Salv Coll Pts and Dep. Capacity: 75,000 Trs. Wt (short tons): on wheels, 114; boxed, 137. Cubage (ship tons): on wheels, 698; boxed, 572.
25	QM Fumi- gation & Bath Co T/O & E 10-257 (30 Sep 43, C1, 2)	O..... 3 EM.....85 Agg.....88	Tlr, 1-ton, cargo.....3 Tlr, bath unit.....2 Trk, ¼-ton.....1 Trk, ¾-ton, Wpn Carr.....1 Trk, 2½-ton, cargo.....7	Function: To delouse Pers, fumi- gate clothing and Equip, Sup clean clothes to Pers being pro- cessed. Capacity: 3,600 per 12 hrs. See remarks under QM Salv Rep Co. Wt (short tons): on wheels, 46; boxed, 56. Cubage (ship tons): on wheels, 296; boxed, 286.
26	QM Sv Co T/O & E 10-67 (25 Feb 44)	O..... 4 EM.....215 Agg.....219	Tlr, 1-ton, cargo.....1 Trk, ¼-ton.....1 Trk, ¾-ton, Wpn Carr.....1 Trk, 2½-ton, cargo.....1	2 Plats ea, of 2 4-Sqd Secs. Assign- ed on basis of tonnage to be handled. Has 160 laborers. Can handle Approx 800 tons of assort- ed Sups per day. Wt (short tons): on wheels, 12; boxed, 14. Cubage (ship tons): on wheels, 79; boxed, 66.

165. QUARTERMASTER UNITS:

*c. Service Force Units:**(6) General Service and Miscellaneous Units (Continued):*

1	2	3	4
Unit	Personnel	Vehicles	Remarks
27 QM Sterilization Co T/O & E 10-177 (1 Apr 42)	O..... 3 EM.....156 Agg.....159	Semi-Tlr, Sterilizer.....4 Tlr, 1-ton.....4 Trk, ¼-ton.....1 Trk, ¾-ton, Wpn Carr.....1 Trk, 2½-ton, cargo.....4 Trk, Trac, 4-, 5-ton.....4	Function: To delouse Pers and sterilize clothing. Capacity Approx 2,500 men per day.

d. Quartermaster Service Organization, T/O & E 10-500 (10 Jan 45):

(Detachments from this organization are grouped as required into Quartermaster Composite Battalions, Composite Companies or separate platoons.)

(1) Administrative Units:

2	HEADQUARTERS			
	AA Plat Hq	O..... 1 EM..... 1 Agg..... 2	Trk, ¼-ton..... 1	Composite Plat Hq when part of a composite Co.
	AB Plat Hq	O..... 1 EM..... 4 Agg..... 5	Tlr, ¼-ton, cargo..... 1 Trk, ¾-ton, Wpn Carr..... 1	Composite Plat Hq when a Sep unit.
	AC Co Hq	O..... 2 EM..... 8 Agg.....10	Tlr, ¼-ton, cargo..... 1 Tlr, 1-ton, cargo..... 1 Trk, ¼-ton..... 1 Trk, 2½-ton, cargo..... 1	Composite Co of 4-8 Plats. May also be used to supervise organized native units. Pers should speak language of native laborers if thus utilized.
	AD Bn Hq	O..... 4 EM.....13 Agg.....17	Tlr, ¼-ton, cargo..... 1 Trk, ¼-ton..... 2 Trk, ¾-ton, Wpn Carr..... 1	Composite Bn of 6-8 composite Cos.
3	MESS TEAMS			
	AE	EM..... 4		40 to 100 Trs.
	AF	EM..... 6		101 to 175 Trs.
	AG	EM..... 8		176 to 225 Trs.
	AH	EM..... 9		226 to 275 Trs.
	AI	EM.....11		276 to 325 Trs.
4	AUTO MECHANIC TEAMS			
	AJ	EM..... 1		Has auto mechanic's tool set only.
	AK	EM..... 2	Trk, 2½-ton, cargo, w/w.... 1	Has Unit Equip 2d Ech tool set No. 1.

165. QUARTERMASTER UNITS:

d. Quartermaster Service Organization, T/O & E, 10-500 (Continued) :

(2) Supply Units:

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
5	SUPPLY DETACHMENTS			
	BA	O..... 1 EM..... 20 Agg..... 21	Tlr, 1-ton, cargo..... 1 Trk, ¾-ton, Wpn Carr..... 1 Trk, 2½-ton, cargo..... 1	Adm and Tech Pers for receipt storage and issue of Cl I, II, III and IV Sup to maintain force of Str indicated. Labor and Trans to be furnished from labor and Trans pools. Serves 3,500 to 7,500 Trs.
	BB	O..... 2 EM..... 28 Agg..... 30	Tlr, 1-ton, cargo..... 1 Trk, ¾-ton, Wpn Carr..... 1 Trk, 2½-ton, cargo..... 1	Serves 7,500 to 15,000 Trs.
	BC	O..... 3 EM..... 35 Agg..... 38	Tlr, 1-ton, cargo..... 1 Trk, ¾-ton, Wpn Carr..... 1 Trk, 2½-ton, cargo..... 1	Serves 15,000 to 25,000 Trs.
6	SALES DETACHMENTS			
	BD	O..... 1 EM..... 14 Agg..... 15	Tlr, 1-ton, cargo..... 1 Trk, 2½-ton, cargo..... 1	Provides and Distr sales articles. 10,000 sales per day.
	BE	EM..... 11	Tlr, 1-ton, cargo..... 1 Trk, 2½-ton, cargo..... 1	Pers and Equip to augment Type BD unit, ratio of assignment not to exceed 3 Type BE sales units to one Type BD unit. Ea augmentation unit capable of making 10,000 sales per day.
7	BAKERY DETACHMENTS			
	BF	EM..... 6		Pers and Equip to bake bread. Operates field bakery Equip. 800 ovens (1 oven operating 8 hrs.
	BG	EM..... 4		Augmentation unit for BF. Both can operate 1 oven 2 shifts or 2 oven 1 shift, for 1,200 Trs.
	BH Bkry Plat	O..... 1 EM..... 26 Agg..... 27	Trk, 2½-ton, 6x6, cargo..... 1	10,000 Trs by working two 8 hr shifts.
8	REMOUNT DETACHMENTS			
	BI	O..... 1 EM..... 27 Agg..... 28		Pers for care and training of Anls, 100 Anls.
	BJ	O..... 1 EM..... 24 Agg..... 25		Augmentation Pers to increase capacity BI unit to 200 Anls.
9	BK BUTCHERY DETACHMENT			
		EM..... 16	Tlr, 1-ton, cargo..... 2 Trk, 2½-ton, cargo, w/w.... 2	

165. QUARTERMASTER UNITS:

d. Quartermaster Service Organization, T/O & E, 10-500 (Continued):(3) *Transportation Units:*

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
10	CAR DETACHMENTS CA	EM..... 9	Tlr, 1/4-ton, cargo..... 8 Trk, 1/4-ton..... 8	Trans units which may be organized singly or in multiple to meet Trans requirements. 32 Trs with not over 125 lbs Bag Ea or 4 tons Gen cargo. 60 Trs with not over 100 lbs Bag Ea.
	CB	EM.....18	Tlr, 1/4-ton.....12 Trk, 1/4-ton.....12 Trk, 3/4-ton, Wpn Carr..... 2	
11	TRUCK DETACHMENTS CD	EM..... 8	Tlr, 1/4-ton..... 1 Tlr, 1-ton, cargo..... 4 Trk, 1/4-ton..... 1 Trk, 3/4-ton, Wpn Carr..... 2 Trk, 2 1/2-ton, cargo, w/o w 2 Trk, 2 1/2-ton, cargo, w/w.... 2	14 tons Gen cargo.
	CE	EM.....12	Tlr, 1/4-ton..... 1 Tlr, 1-ton, cargo..... 8 Trk, 1/4-ton..... 1 Trk, 2 1/2-ton, cargo w/o w.... 4 Trk, 2 1/2-ton, cargo, w/w.... 4	28 tons cargo; if equipped with 750 Gal tank Trks, 6,000 Gal.
	CF	EM.....15	Tlr, 1/4-ton..... 1 Tlr, 1-ton, cargo..... 8 Trk, 1/4-ton..... 1 Trk, 4-ton, cargo..... 8 Trk, 10-ton, Hv wrecker, M1A1..... 1	40 tons cargo
	CG	EM.....15	Semi-Tlr, 2 wheel combination Anl and cargo..... 8 Tlr, 1/4-ton..... 1 Trk, 1/4-ton..... 1 Trk, 4 to 5-ton, tractor..... 8 Trk, 10-ton, Hv wrecker, M1A1..... 1	48 tons Gen cargo.
	CI	O..... 1 EM.....26 Agg.....27	Semi-Tlr, 2 wheel combination Anl and cargo..... 4 Tlr, 1/4-ton..... 8 Tlr, 1-ton, cargo..... 4 Trk, 1/4-ton..... 8 Trk, 3/4-ton, Wpn Carr..... 2 Trk, 4-ton, cargo..... 4 Trk, 4 to 5-ton, Trac..... 4 Trk, 10-ton, Hv wrecker, M1A1..... 1	38 Trs and 42 tons cargo.

165. QUARTERMASTER UNITS:

d. Quartermaster Service Organization, T/O & E, 10-500:

(3) Transportation Units (Continued) :

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
12	REFRIGERATOR TRUCK DETACHMENT CJ	EM..... 2	Trk, 4 to 5-ton, Trac..... 1 Semi-Tlr, 2 wheel, 10-ton Ref..... 1	Ref Trk serve 5,000 Trs if trip only 1 day.
	CK	EM..... 7	Trk, 4 to 5-ton, Trac..... 3 Semi-Tlr, 2 wheels, 10-ton, Ref..... 3	Ref Trk serve 15,000 Trs if trip only 1 day.
13	PACK DETACHMENT CL	O..... 1 EM.....13 Agg.....14		EM Mtd on mules riding. Pers and Anls for 5 tons cargo if components do not exceed 200 lbs and are not too bulky.
	CM	EM..... 7		2½ tons cargo. Same restrictions as for CL.
14	DRIVER DETACHMENT CN	EM.....24		Driver augmentation team to provide 2 drivers per Veh for standard Trk Co when Vehs operating over long period of time.
	CO	EM.....24		
	CP	EM..... 2		
	CQ (Augmentation)	EM..... 2		

165. QUARTERMASTER UNITS:

d. Quartermaster Service Organization, T/O & E, 10500 (Continued):

(4) Repair Units:

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
15	CLOTHING AND EQUIPMENT REPAIR DETACHMENT			Provides Pers to operate fixed or semi-fixed Rep Instl equipped to Rep, for restockage or return to the individual or Orgn, all types clothing, leather canvas or web items of Equip that are QM Maint responsibility. For 2,500 Trs.
	DA	EM..... 8		For 5,000 Trs.
	DB	EM.....14		For 7, 500 Trs.
	DC	O..... 1 EM.....22 Agg.....23		For 10,000 Trs.
	DD	O..... 1 EM.....31 Agg.....32		For 12,500 Trs.
	DE	O..... 1 EM.....37 Agg.....38		For 15,000 Trs.
	DF	O..... 1 EM.....43 Agg.....44		For 17,500 Trs.
	DG	O..... 1 EM.....48 Agg.....49		For 20,000 Trs.
	DH	O..... 1 EM.....55 Agg.....56		
16	DI OFFICE MACHINE REPAIR DETACHMENT Mobile	EM..... 2	Trk, ¾-ton, Wpn Carr..... 1	Pers and Equip for repair of office machines. Can make Reps in the field.

165. QUARTERMASTER UNITS:

d. Quartermaster Service Organization, T/O & E, 10500 (Continued):

(5) Laundry and Dry Cleaning Units:

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
17	LAUNDRY DETACHMENT			Operate Mbl and fixed laundry Equip and fixed and semi-fixed dry-cleaning Instls. Folding, re-sizing and marking must be performed by labor (Civ or Mil) from other sources. Totals do not include labor, which should not exceed following proportion to Sec Str: Temperate Z Units 200%. Frigid Z 50%. Hosp 75%. Dry Cleaning Units 10%. Mbl laundry Equip for 1,500 Trs. Trk equipped with ring mount.
	EA (mobile)	O..... 1 EM.....13 Agg.....14	Trk, 4 to 5-ton, Trac..... 1 Semi-Tr, 2 wheel, 10-ton, van type ,laundry..... 1	
	EB (aug mentation)	EM..... 7		Augmentation to EA, provides 2d shift, uses same Equip. Capacity 3,000 Trs.
18	LAUNDRY DETACHMENT, TEMPERATE ZONE			
	EC	O..... 1 EM.....13 Agg.....14		2,500 Trs, using fixed or semi-fixed machines installed by Engrs.
	ED	O..... 1 EM.....23 Agg.....24		5,000 Trs under same conditions as EC.
	EE	O..... 1 EM.....33 Agg.....34		10,000 Trs under same conditions as EC.
19	LAUNDRY DETACHMENT, FRIGID ZONE			
	EF	O..... 1 EM.....13 Agg.....14		2,500 Trs under same conditions as EC.
	EG	O..... 1 EM.....22 Agg.....23		5,000 Trs under same conditions as EC.
	EH	O..... 1 EM.....31 Agg.....32		10,000 Trs under same conditions as EC.

165. QUARTERMASTER UNITS:

d. Quartermaster Service Organization, T/O & E, 10-500:

(5) Laundry and Dry Cleaning Units (Continued):

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
20	LAUNDRY DETACHMENT, HOSPITAL			Serves 500 bed Hosp, machines installed by Engrs. Unit normally Atchd to Hosp for Adm and rations. Serves 1,000 bed Hosp under same conditions as EI.
	EI	O..... 1 EM.....13 Agg.....14		
	EJ	O..... 1 EM.....15 Agg.....16		
21	DRY CLEANING DETACHMENT:			
	EL	EM..... 5		1,100 Trs. Operates machines installed by Engrs. 2,800 Trs under same conditions as EL.
	EM	EM..... 8		

(6) Petroleum Units:

22	PETROLEUM PRODUCTS LABORATORY:		Tests petroleum products and functions as parent unit for not to exceed 3 Type FB Mbl Labs.
FA (Base)	O..... 2 EM.....10 Agg.....12	Tlr, 1/4-ton.....1 Trk, 1/4-ton.....1	
FB (Mbl)	O..... 1 EM..... 5 Agg..... 6	Trk, 3/4-ton, Wpn Carr.....1 Trk, 2 1/2-ton, cargo, w/w.....1	
23	DRUM CLEANING DETACHMENTS:		Equipment and Pers for one shift, to clean 6,500 5 Gal Gas cans prior to refilling or storage. Augmentation Pers to FC unit operate same Equip one additional shift, Cap 6,500 additional cans cleaned.
FC (5 Gal)	EM..... 8	Tlr, 1-ton, cargo.....1 Trk, 2 1/2-ton, cargo, w/w.....1 Cleaner, drum, Tlr-Mtd, Gas, engine driven.....1	
FD (Augmentation)	EM..... 8		
24	DRUM FILLING DETACHMENTS:		Pers and Equip fill 5 Gal cans from bulk. Can package 33,000 Gal in one shift. Augments FE unit. Same Equip for additional shift.
FE	O..... 1 EM.....27 Agg.....28	Tlr, 1-ton, cargo.....1 Trk, 1/4-ton.....1 Trk, 3/4-ton, Wpn Carr, w/w.....1 Trk, 2 1/2-ton, cargo, w/w..... Pump, Gas dispensing, Engine driven, 30 Gal per Min.....1 Pump, Gas dispensing, Engine driven, 100 Gal per Min.....1	
FF (Augmentation)	EM.....25		

165. QUARTERMASTER UNITS:

d. Quartermaster Service Organization, T/O & T, 10-500:

(6) Petroleum Units (Continued):

1	1 Unit	2 Personnel	3 Vehicles	4 Remarks
25	FG Drum Cleaning Plat	O..... 1 EM.....50 Agg.....51		Provides Pers to operate a fixed drum Rep plant installed by the QM in the CZ. This Plat is capable of two shift Opn and can inspect, clean and make necessary Reps to 2,000 55 Gal drums for 16 Hr day. The unit normally operates with a drum filling Plat (55 Gal) team FH.
26	FH Drum Filling	O..... 1 EM.....83 Agg.....84		Provides Pers to operate a fixed drum filling plant installed by QM in the CZ. This Plat is capable of two shift Opn and can fill 3,500 55 Gal drums with petroleum products in 1-16 Hr day. The unit normally operates with a drum cleaning Plat (FG) or with a large drum manufacturing Co.

(7) Miscellaneous Units:

27	GRAVES REGISTRATION DETACHMENTS: GA O..... 1 Tlr, 1-ton, cargo.....1 EM.....10 Trk, ¾-ton, Wpn Carr, w/w 1 Agg.....11 GB EM..... 6 Trk, 2½-ton cargo.....1	Handles mortality expectancy of 5,000 Trs. Augmentation to GA, increases Cap by 5,000 Trs. Not to exceed two GB units to Ea GA.
28	GC Hq, Graves Registration Plat O..... 1 Tlr, 1-ton, cargo.....1 EM..... 7 Trk, ¼-ton.....1 Agg..... 8 Trk, ¾-ton, Wpn Carr, w/w.....1 Trk, 2½-ton, cargo.....1	Supervises Opns of GD and GE units. Can process records of from 1 to 3 GD or GE units.
29	GRAVES REGISTRATION COLLECTING DETACHMENTS: GD EM.....13 GE EM.....10 Tlr, 1-ton, 2-wheel, cargo.....2 Trk, 2½-ton, cargo.....2	Provides litter teams to search for and collect battlefield dead for a force of 5,000 Trs. Provides Pers and Equip to initiate Ident of and Evac the battlefield dead who have been delivered to it by 1 GD unit.
30	HA Fumigation and Bath Plat O..... 1 Trk, 2½-ton, cargo..... 3 EM.....28 Bath unit, Mbl, 24 head..... 1 Agg.....29 Fumigation chamber..... 3	Provides Pers and Equip to delouse Pers, fumigate clothing and Equip and Sup a clean change of clothing excluding shoes to 1,800 individuals in one 10 Hr shift.

165. QUARTERMASTER UNITS:

d. Quartermaster Service Organization, T/O & E, 10-500:

(7) Miscellaneous Units (Continued):

1	2	3	4
Unit	Personnel	Vehicles	Remarks
31 HB Fumigation and Bath Det (Aug- mentation)	EM.....22		Provides Pers and Equip to operate HA Equip 1 extra 10 Hr shift and serve 1,800 additional individuals.
32 HC DDT Dis- pensing Det	EM.....13	Trk, 2½-ton, cargo.....1 Outfit, delousing, Gas engine driven.....1	Pers and Equip to delouse an estimated 6,000 persons per day (including individual clothing and Equip) by dusting with DDT powder.
33 HD Bath Det	EM..... 6	Trk, 2½-ton, cargo.....1 Bath unit, Mbl, 24 head.....1	Bathing facilities in the field for 1,800 individuals in one 10 Hr shift. Capacity is based on 8 Mins per individual.
34 SALVAGE COLLECTING DETACHMENTS:			
IA	O..... 1 EM.....32 Agg.....33	Tlr, 2½-ton, cargo.....1 Trk, ¼-ton.....1 Trk, 2½-ton, cargo.....2 Trk, 4-ton wrecker.....1	Capable of handling the Salv expectancy of 12,000 Trs.
IB	EM.....12	Tlr, 1-ton, cargo.....1 Trk, 2½-ton, cargo.....1	Pers and Equip to augment IA and handle Salv expectancy of 6,000 additional Trs. Not more than 3 teams IB should be Atchd to 1 team IA.
35 LABOR DETACHMENTS:			
JA	EM..... 3		Gen Sv teams JA, JB, JC and JD provide additional labor Pers to supplement other QM units. When used in Sup work, the teams are capable of handling Approx 15 tons, 25 tons, 50 tons and 200 tons of Gen Sups per day, respectively.
JB	EM..... 5		
JC	EM.....11		
JD	EM.....45		

■ 166. SIGNAL UNITS:

a. Air Force Units:

(1) Command and Control Units:

1	2	3	4
Unit	Personnel	Vehicles	Remarks
2 Sig Co Avn T/O & E 11-217 (19 May 42)	O..... 6 EM.....166 Agg.....172 (Variable)	Tlr, 1-ton.....4 Trk, 1/4-ton.....4 Trk, 3/4-ton, Wpn Carr.....3 Trk, 2 1/2-ton, cargo.....1 Trk, 2 1/2-ton, cargo, w/w.....3	Hq Sec, Co Hq, Opn Plat, Rad Inf Plat (1 per SAF, A Def Comd, ASC, TBC & TAC). Provides Sig Coms at each Hq.
3 Sig Co Wg	O..... 3 EM.....86 Agg.....89	Tlr, 1-ton.....4 Trk, 1/4-ton.....4 Trk, 3/4-ton, Wpn Carr.....2 Trk, 2 1/2-ton, cargo, w/w.....2 Trk, 2 1/2-ton, cargo.....1	Hq Plat and Com Plat. (1 per Wg except Tr Carr Wg). Installs and operates Com at Hq of Wg to which assigned.
4 Sig Co Tr Carr Wg T/O & E 11-257 (14 Aug 43, C1, 2)	O..... 7 EM.....127 Agg.....134	Tlr, 1/4-ton..... 2 Tlr, 1-ton..... 3 Trk, 1/4-ton.....11 Trk, 3/4-ton, Wpn Carr..... 3 Trk, 2 1/2-ton, cargo.....10 Trk, 2 1/2-ton, cargo, w/w..... 2	Hq Plat, Rad Plat, Tp & Tg Plat. (1 per Tr Carr Wg. Provides Sig Com for Wg Hq.)
5 Sig AW Orgn T/O & E 11-400 (1 May 44)	Varies	Varies	Bn Hq, Co Hq, Reporting Plat, Radar Operating Plat, Plotting Plat, Plotting Board Team, Radar Maint team, Msg C Team, Rad Team, Wire Team, Tg Team, Filter Plat, Gr Obsn Team (Tp), Gr Obsn Team (Rad), Mess Team, L Warning Plat. (Special unit for Task F use. Made up of one or more of each type unit shown above.)
6 Sig Co, AF T/O 11-267 (14 Mar 42)	O..... 7 EM.....207 Agg.....214	Tlr, 1-ton..... 6 Trk, 1/4-ton..... 5 Trk, 3/4-ton..... 3 Trk, 3/4-ton, Wpn Carr..... 2 Trk, 1 1/2-ton, cargo.....12 Trk, 2 1/2-ton, cargo..... 2 Trk, K-53..... 5	Sig Hq, Co Hq, Wire & Msgr Plat, Rad Plat. (1 per AF. Provides Sig Com for AF Hq.)
7 Sig Hq Co AWS Ftr Comd T/O & E 11-460 (26 Aug 43, C1)	O..... 11 WO..... 2 EM.....212 Agg.....225	Tlr, 1-ton..... 2 Trk, 1/4-ton..... 3 Trk, 3/4-ton..... 2 Trk, 3/4-ton, Wpn Carr..... 4 Trk, 2 1/2-ton, cargo..... 1 Trk, 2 1/2-ton, cargo, w/w..... 2 Trk, 2 1/2-ton, cargo..... 3	Hq Plat, Plotting Plat, Com Plat. (1 per Ftr Comd Provides Sv to Ftr Comd Hq.)
8 Joint Assault Sig Co T/O & E 11-147S (30 Dec 44)	O.....13 EM.....39 Agg.....52 (Variable)	Tlr, 1/4-ton.....12 Tlr, 1-ton..... 1 Trk, 1/4-ton.....12	Coln 7 of T/O only. Provides 13 Air Ln Parties for Amph landings.

166. SIGNAL UNITS:

a. Air Force Units:(1) *Command and Control Units (Continued) :*

1	1 Unit	3 Personnel	3 Vehicles	4 Remarks
9	Ftr Contl Sq T/O & E 1-47 (18 Oct 44)	O..... 23 EM..... 217 Agg..... 240 (Variable)	Trk, 1/4-ton..... 15 Trk, 3/4-ton, 4x4, Amb, KD..... 1 Trk, 3/4-ton, Wpn Carr..... 3 Trk, 2 1/2-ton, cargo..... 3 Trk, 2 1/2-ton, w/w..... 2 (Variable)	Basic unit amplified by addition of control, D/F, GC1, Mess, Radio Link, and Radio Relay teams as required by type of mission assigned. Designed for air defense and TAC operations.
10	TAC Air Com Sq T/O & E 1-547 (18 Oct, 43, C1, 2, 3, 4)	O..... 6 EM..... 213 Agg..... 219	Tlr, 1/4-ton..... 33 Tlr, 1-ton, water..... 1 Tlr, 1-ton..... 3 Trk, 1/4-ton..... 34 Trk, 3/4-ton, Comd..... 1 Trk, 3/4-ton, Wpn Carr..... 1 Trk, 2 1/2-ton, cargo..... 8 Trk, 2 1/2-ton, w/w..... 1	Installs, operates and Maint Com for Air Ground information. Center and associated AALO and GLO system working with Army and TAC.

(2) *Construction and Maintenance Units:*

11	Sig Bn Sep TAC T/O & E 11-335 (2 Sept 44)	O..... 34 WO..... 1 EM..... 655 Agg..... 690	Tlr, 1/4-ton..... 24 Tlr, 1-ton..... 10 Trk, 1/4-ton..... 38 Trk, 3/4-ton, Wpn Carr..... 39 Trk, 3/4-ton, Amb..... 1 Trk, 1 1/2-ton..... 1 Trk, 2 1/2-ton..... 28 Trk, 2 1/2-ton, w/w..... 13	Total includes Med Det of 2 O and 14 EM. Installs, maintains and operates all Com agencies of a TAC except that done by the TCG. Bn includes Hq & Hq Det, Sig Bn Sep, TAC (T/O & E 11-336, 8 O, 36 EM); Sig Outpost Opns Co (T/O & E 11-337, 6 O, 141 EM); Sig Hq Opns Co (T/O & E 11-388, 6 O, 138 EM); and 2 Sig L Cons Cos, (T/O & 11-277, 6 O, 164 EM each).
12	Sig Rad Maint Unit Avn T/O & E 11-357 (26 May 44, C1)	Varies	Varies	Provides for Grd Radar Maint Instl Teams, and VHF Instl and Maint Team. These teams are to be provided to overseas AF Sv Comds as required to perform the following functions: Instl and Maint of Grd radar beacons and similar navigation aids. Instl and Maint of instrument landing systems. Maint of Sp types of Acft Rad and radar Equip.

166. SIGNAL UNITS:

a. Air Force Units:

(2) Construction and Maintenance Units (Continued):

1	2	3	4
Unit	Personnel	Vehicles	Remarks
13 Sig Hv Const Bn T/O & E 11-65 (25 Apr 44)	O..... 21 EM..... 456 Agg..... 477 (Variable)	Tlr, 1/4-ton.....18 Tlr, 1-ton.....39 Trk, 1/4-ton.....27 Trk, 3/4-ton, w/c..... 2 Trk, 3/4-ton, Wpn Carr, w/w.....18 Trk, 2 1/2-ton, cargo..... 3 Trk, 2 1/2-ton, w/w.....36 Tlr, K-36..... 8 Tlr, K-38..... 4 Tlr, K-43.....16 Tlr, K-44..... 8	Consists of Hq & Hq Det, T/O 11-26 and 2 Hv Cons Cos, T/O 11-67. (One per Com Z or AF). All type permanent or semi-permanent line Const.

(3) Supply and Repair Units:

14 Sig Co Dep, Avn T/O & E 11-287 (11 Apr 44)	O..... 9 WO..... 1 EM.....179 Agg.....189 (Variable)	Tlr, 1/4-ton, cargo.....2 Tlr, 1-ton, cargo.....8 Trk, 1/4-ton.....4 Trk, 3/4-ton, Wpn Carr.....8 Trk, 2 1/2-ton, cargo.....2 Trk, 2 1/2-ton, cargo, w/w.....4 Trk, 2 1/2-ton, Mach shop, M16A1 (load A & B).....1 Trk, 2 1/2-ton, small arms repair..... 2	Hq Sec, Opn Plat, Sup & Rep Plat. (1 per Dep Gp.) Performs all 4th Ech Maint on Abn & Grd Sig Equip. Provides Sig Com for Air Dep Gp to which Atchd.
15 Sig Co Sv Gp T/O & E 11-237 (26 Mar 43)	O..... 3 EM..... 97 Agg.....100 (Variable)	Tlr, 1-ton.....5 Trk, 1/4-ton.....5 Trk, 3/4-ton, Wpn Carr.....3 Trk, 2 1/2-ton, cargo.....1 Trk, 2 1/2-ton, cargo, w/w.....2 Trk, 2 1/2-ton, small arms Rep.....2	Hq Sec, Opn Plat, Sup & Rep Plat. (1 per Sv Gp). Provides Com at Sv Gp Hq and 3d Ech Rep of Sig Equip.
16 Sig Rad Maint Unit Avn T/O & E 11-357 (26 May 44, C1)	See Par 166 a, 16 Sig Rad See Par 166 a (2), line 12.		

166. SIGNAL UNITS:

*a. Air Force Units (Continued):**(4) Intelligence and Security Units:*

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
17	Rad Sq, Mbl T/O & E 1-1027 (19 Jan 45)	O..... 24 EM.....295 Agg.....319 (Variable)	Tlr, 1/4-ton..... 6 Tlr, 1-ton.....14 Trk, 1/4-ton.....15 Trk, 3/4-ton, Wpn Carr..... 3 Trk, 2 1/2-ton.....19 Trk, 2 1/2-ton, w/w..... 8 Trk, 1 1/2-ton..... 4	Provides voice and CW intercept, D/F, Sv, Analysis, Rad Int evaluation. Cellular type teams are added to figures shown to perform these functions.
18	Rad Security Det T/O & E 1-952 (10 May 44)	O..... 6 EM.....29 Agg.....35 (Variable)	Trk, 1/4-ton.....2 Trk, 3/4-ton, Wpn Carr.....3 Trk, 1 1/2-ton.....1 Trk, 2 1/2-ton.....2 Trk, 2 1/2-ton, w/w.....1	Hq Det and one Sec. There can be added 18 more Secs. for monitoring AAF Rad nets on global basis for security purposes and analyzing traffic.

(5) Miscellaneous Units:

20	AB Com Det Sp (T/O & E 1-469S) (12 Feb 45)	O..... 1 EM.....28 Agg.....29	Trk, 1/4-ton.....1 Trk, 3/4-ton, Wpn Carr.....1 Trk, 2 1/2-ton, w/w.....2	Installs, operates and Maints Adm Com of a Tac Opnl Adm, calling upon the AAF for Instl of wire lines.
21	Air C Contl Sq, Amph T/O & E 1-387S (28 Sep 44)	O.....11 EM.....46 Agg.....57	None	Provides initial SW and Ftr Contl for Amph landings.
22	Tac Contl Gp T/O 1-1322 (30 Nov 43)		Not available.	Provides Equip and Pers to instal all AW, GCI, D/F and Contls for TAC.
23	Mbl Com Sq Sp T/O 1-437S	O..... 9 EM.....16 Agg.....25 (Variable)	Tlr, 1/4-ton.....2 Tlr, 1-ton.....1 Trk, 1/4-ton.....2 Trk, 3/4-ton, Wpn Carr.....1	Hq Sec to which are furnished operating teams of 9 EM each for Opn of Mbl Wea Sta R sets.

*b. Combat Support Units:**(1) Command and Control Units:*

2	Sig Co, Inf Div T/O & E 11-7 (11 Dec 43, C1, 2)	O..... 9 WO..... 4 EM.....226 Agg.....239	Tlr, 1-ton.....18 Tlr, K-52..... 1 Trk, 1/4-ton.....16 Trk, 3/4-ton, Wpn Carr.....19 Trk, 1 1/2-ton, cargo..... 4 Trk, 2 1/2-ton, cargo.....15 Trk, 2 1/2-ton, Sig Corps, Rep.....2	Div Sig O's Sec, Hq Plat, Opr Plat, Cons Plat. (1 per Inf Div. Wt (short tons): on wheels, 180 boxed, 212. Cubage (ship tons): on wheel 1,244; boxed, 840.
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166. SIGNAL UNITS:

b. Combat Support Units:

(1) *Command and Control Units (Continued):*

1	2	3	4
Unit	Personnel	Vehicles	Remarks
3 Armd Sig Co T/O & E 11-57 (15 Sep 43, C1, 2, 3, 4)	O..... 11 WO..... 3 EM..... 279 Agg..... 293	Tlr, 1-ton..... 11 Tlr, K-52..... 6 Trk, 1/4-ton..... 22 Trk, 2 1/2-ton, cargo..... 19 Trk, 2 1/2-ton, Sig Corps Rep..... 2	Div Sig O's Sec, Hq Plat, Opns Plat, Rad Plat, Rad Rep Sec, Div Sig Co Sup Sec. (1 per Armd Div.) Wt (short tons): on wheels, 314; boxed, 345. Cubage (ship tons): on wheels, 1,567; boxed, 1,441.
4 Abn Sig Co T/O & E 11-557T (16 Dec 44)	O..... 10 WO..... 4 EM..... 271 Agg..... 285	Mtrcl, solo..... 9 Tlr, 1/4-ton..... 23 Trk, 1/4-ton..... 45 Tlr, 1-ton..... 18 Trk, 3/4-ton..... 3 Trk, 1 1/2-ton, cargo..... 4 Trk, 2 1/2-ton, cargo..... 6 Trk, 2 1/2-ton, cargo, w/w..... 7 Trk, 2 1/2-ton, Sig Corps Rep..... 2	Div Sig O's Sec, Hq, Cons & Opns Plats, organized into air landing groups. (1 per Abn Div.)
5 Sig Bn T/O & E 11-15 (10 Dec 43)	O..... 32 WO..... 4 EM..... 757 Agg..... 793	Tlr, 1/4-ton..... 19 Tlr, 1-ton..... 54 Tlr, K-36..... 8 Tlr, K-52..... 3 Trk, 1/4-ton..... 47 Trk, 3/4-ton, Comd..... 5 Trk, 3/4-ton, Wpn Carr..... 50 Trk, 1 1/2-ton, cargo..... 7 Trk, 2 1/2-ton, cargo..... 62 Trk, 2 1/2-ton, small arms, Rep..... 3 Trk, K-43..... 18 Trk, K-44..... 8	Hq & Hq Co, 2 L Cons Cos, Field Opn Co (1 per Corps). Wt (short tons): on wheels, 753; boxed, 828. Cubage (ship tons): on wheels, 5,047; boxed, 3,563.
6 Sig Opn Bn T/O 11-95 (15 May 44, C1)	O..... 21 WO..... 5 EM..... 526 Agg..... 552	Tlr, 1/4-ton..... 16 Tlr, 1-ton..... 12 Tlr, K-52..... 6 Trk, K-43..... 4 Semi-Tlr, 3-ton, van..... 12 Trk, 1/4-ton..... 49 Trk, 3/4-ton, Wpn Carr..... 28 Trk, 2 1/2-ton, cargo..... 12 Trk, 1 1/2-ton, cargo, w/w..... 6 Trk, Trac, 1 1/2-ton..... 6	Hq & Hq Co, 2 Sig Opn Cos. (1 or more per Army and Theater.) Wt (short tons): on wheels, 305; boxed, 346. Cubage (ship tons): on wheels, 2,164; boxed, 1,719.

(2) *Construction and Maintenance Units:*

7 Sig L Cons Bn T/O 11-25 (25 Feb 44, C1)	O..... 19 WO..... 1 EM..... 416 Agg..... 436	Tlr, 1/4-ton..... 14 Tlr, 1-ton..... 31 Tlr, K-36..... 8 Trk, 1/4-ton..... 23 Trk, 3/4-ton, Wpn Carr..... 36 Trk, 2 1/2-ton, cargo..... 39 Trk, K-43..... 16 Trk, K-44..... 8	Hq & Hq Co, 2 Cons Cos. (1 or more per Army and Theater.) Wt (short tons): on wheels, 729; boxed, 820. Cubage (ship tons): on wheels, 4,300; boxed, 3,123.
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166. SIGNAL UNITS:

*b. Combat Support Units (Continued):**(3) Supply and Repair Units:*

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
8	Sig Dep Co T/O 11-107 (6 Feb 45)	O..... 6 WO..... 2 EM.....135 Agg.....143	Tlr, 1-ton.....7 Trk, 1/4-ton.....1 Trk, 3/4-ton, Wpn Carr.....4 Trk, 2 1/2-ton, cargo.....2 Trk, 2 1/2-ton, Mach Shop.....2 Trk, 2 1/2-ton, Sig Corps, Rep.....5	Hq Plat, Rep Plat, 3 Storage and Issue Secs. (1 or more per Army and Theater.) Wt (short tons): on wheels, 114; boxed, 125. Cubage (ship tons): on wheels, 954; boxed, 873.
9	Sig Rep Co T/O & E 11-127 (27 May 44, C 1, 2)	O..... 6 WO..... 1 EM.....152 Agg.....159	Tlr, 1-ton.....19 Trk, 1/4-ton.....2 Trk, 3/4-ton, Wpn Carr.....1 Trk, 2 1/2-ton, cargo.....18 Trk, 2 1/2-ton, Sig Corps, Rep.....15	Hq Plat, 10 Rad Rep Secs, 5 Wir Rep Secs, (1 or more per Army and Theater.) Wt (short tons): on wheels, 190 boxed, 209. Cubage (ship tons): on wheels 1,482; boxed, 1,084.

(4) Intelligence and Security Units:

10	Sig Rad Int Co T/O 11-77 (1 Apr 42)	O..... 7 WO..... 1 EM.....251 Agg.....259	Tlr, 1/4-ton.....19 Tlr, 1-ton.....2 Tlr, K-55.....11 Trk, 1/4-ton.....4 Trk, 3/4-ton, Rad.....1 Trk, 3/4-ton, Wpn Carr.....15 Trk, 2 1/2-ton, cargo.....2 Trk, 2 1/2-ton, cargo, w/w.... 1	Hq Plat, Intercept Plat, Pos Find ing Plat, Wire Plat. (1 or more per Army and Theater.) Wt (short tons): on wheels, 176 boxed, 213. Cubage (ship tons): on wheels 1,382; boxed, 901.
11	Sig Info & Monotoring Co 11-87S (10 May 44) Hq Plat Army Plat Corps Plat	 O.....14 EM.....15 Agg.....29 O..... 1 EM.....46 Agg.....47 O..... 1 EM.....23 Agg.....24	 Tlr, 1/4-ton.....1 Tlr, 1-ton.....4 Trk, 1/4-ton.....2 Trk, 3/4-ton, Wpn Carr.....1 Trk, 2 1/2-ton, cargo.....4 Tlr, 1/4-ton.....1 Tlr, 1-ton.....2 Trk, 1/4-ton.....1 Trk, 3/4-ton, Wpn Carr.....2 Trk, 2 1/2-ton, cargo.....2 Tlr, 1/4-ton.....1 Tlr, 1-ton.....1 Trk, 1/4-ton.....1 Trk, 3/4-ton, Wpn Carr.....1 Trk, 2 1/2-ton, cargo.....1	No. of Corps, Div, & Armd Di Plats varies with strength and employment of unit to which th Co is Atchd. 1 Hq Plat and 1 Army Plat can S an Army Hq. 1 Corps Plat can Sv a Corps Hq.

166. SIGNAL UNITS:

b. Combat Support Units:

(4) *Intelligence and Security Units (Continued):*

1	2	3	4
Unit	Personnel	Vehicles	Remarks
Div Plat	O..... 1 EM.....44 Agg.....45	Tlr, 1/4-ton.....2 Tlr, 1-ton.....2 Trk, 1/4-ton.....1 Trk, 3/4-ton, Wpn Carr.....2 Trk, 2 1/2-ton, cargo.....2	1 Div Plat can Sv an Inf Div Hq.
Armd Div Plat	O..... 1 EM.....31 Agg.....32	Tlr, 1/4-ton.....1 Tlr, 1-ton.....1 Trk, 1/4-ton.....1 Trk, 3/4-ton, Wpn Carr.....1 Trk, 2 1/2-ton, cargo.....1	1 Armd Div Plat can Sv an Armd Div Hq.

(5) *Miscellaneous Units:*

12	Sig Photo Co T/O 11-37 (12 Feb 44, C1, 2)	O..... 17 WO..... 1 EM.....130 Agg.....148	Tlr, 1/4-ton.....24 Tlr, 1-ton..... 2 Trk, 1/4-ton.....25 Trk, 3/4-ton, Wpn Carr..... 6 Trk, 2 1/2-ton, cargo..... 6	Hq Plat, Lab Plat and Assignment Plat. Wt (short tons): on wheels, 84; boxed, 92. Cubage (ship tons): on wheels, 535; boxed, 397.
13	Sig Pgn Co T/O & E 11-39 (6 Sep 43, C1, 2)	O..... 9 EM.....143 Agg.....152	Tlr, 1/4-ton.....25 Tlr, 1-ton.....17 Trk, 1/4-ton.....28 Trk, 3/4-ton, Wpn Carr..... 3 Trk, 1 1/2-ton, cargo.....16 Trk, 2 1/2-ton, cargo..... 1	Hq Plat, 3 C Plats. (1 or more per Army and Theater.) Wt (short tons): on wheels, 177; boxed, 194. Cubage (ship tons): on wheels, 1,179; boxed, 783.
14	Sig Co Joint Assault T/O & E 11-147S (30 Dec 44, C3)	Ground O..... 25 WO..... 1 EM.....328 Air O..... 13 EM..... 39 Navy O..... 13 EM.....123 Total Agg.....542	Tlr, 1/4-ton.....31 Tlr, 1-ton..... 2 Trk, 1/4-ton.....42 Trk, 3/4-ton, Wpn Carr..... 6 Trk, 2 1/2-ton, cargo..... 1 Car, Half-track, M3A2..... 1	Hq Plat 10 Bn Shore & Beach Party Com Secs, 13 Shore fire Contl Secs, 13 Air Ln Secs. (For Amph Opns.) Wt (short tons): on wheels, 134; boxed, 161. Cubage (ship tons): on wheels, 750; boxed, 415.

166. SIGNAL UNITS:

c. Service Units:

(1) Supply and Maintenance Units:

1	1 Unit	2 Personnel	3 Vehicles	4 Remarks
1	Hq & Hq Co Sig Base Dep T/O 11-592 (23 Nov 43, C1)	O..... 24 EM..... 91 Agg.....115	Trk, 1/4-ton.....8 Trk, 3/4-ton, Wpn Carr.....2 <i>Remarks—(Continued)</i> Wt (short tons): on wheels, 15; boxed, 17. Cubage (ship tons): on wheels, 75; boxed, 60.	Function: provides Stf and Pers for supervision of all functions of Sig Base Dep Gp, including Sup and 5th Ech Maint. No Com or Photo functions can be provided by the Sig Base Dep Gp. Assignment: Part of Sig Base Dep, which is itself part of Gen Dep. Capacity: supervision 1 or more Sig Base Dep Cos plus 1 or more Sig Base Maint Cos.
2	Sig Base Dep Co T/O 11-597 (23 Nov 43, C1, 2, 3)	O..... 7 WO..... 1 EM.....120 Agg.....128	Tlr, 1-ton.....4 Tlr, V-13/6-ton.....2 Trk, 1/4-ton.....2 Trk, 3/4-ton, Wpn Carr.....2 Trk, 2 1/2-ton, cargo.....5 Trk, 4-5-ton, trac.....2	Function: receipt, storage and issue of all items Sig Equip. Maint of stock levels, follow-up of requisitions, and all other Sig Sup functions. Assignment: Part of Sig Base Dep Gp—in itself part of Gen Dep. Capacity: Sup for force 100,000. Wt (short tons): on wheels, 34; boxed, 37. Cubage (ship tons): on wheels, 248; boxed, 147.
3	Sig Base Maint Co T/O 11-587 (29 Mar 45)	O..... 20 WO..... 5 EM.....292 Agg.....317	Tlr, 1-ton.....3 Trk, 3/4-ton, Wpn Carr.....3 Trk, 2 1/2-ton, cargo.....3 Trk, 2 1/2-ton, Sig Rep.....2	Function: 5th Ech Maint for Sig Equip. Assignment: part of Sig Base Dep Gp which is itself part of Gen Dep. Capacity: Provides 5th Ech Maint for force of 100,000. Wt (short tons): on wheels, 40; boxed, 44. Cubage (ship tons): on wheels, 244; boxed, 208.

166. SIGNAL UNITS:

c. Service Units (Continued):

(2) Construction Units:

	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
4	Sig L Cons Bn T/O 11-25 (25 Feb 44, C1)	See Par 166 b, line 7.		
5	Sig I. Cons Co T/O 11-27 (12 Oct 43, C1)	O..... 6 WO..... 0 EM.....186 Agg.....192 When Separate O..... 6 EM.....188 Agg.....194	Tlr, 1/4-ton..... 6 Tlr, 1-ton.....14 When separate.....15 Tlr, K-36..... 4 Trk, 1/4-ton.....10 Trk, 3/4-ton, Wpn Carr.....17 Trk, 2 1/2-ton, cargo.....18 When separate.....19 Trk, K-43..... 8 Trk, K-44..... 4	1 Hq Plat. 2 Cons Plats of 1 Plat Hq & 6 Cons teams each. Wt (short tons): on wheels, 336; boxed, 374. Cubage (ship tons): on wheels, 1,940; boxed, 1,423.
6	Sig H Cons Bn T/O 11-65 (25 Apr 44, C1)	O..... 21 WO..... 1 EM.....415 Agg.....437	Tlr, 1/4-ton.....18 Tlr, 1-ton.....39 Tlr, 1-ton, water tank, 250-gal..... 1 Tlr, V-13/6-ton..... 4 Tlr, K-37..... 4 Trk, 1/4-ton.....27 Trk, 3/4-ton, Wpn Carr.....20 Trk, 2 1/2-ton, cargo.....33 Trk, K-38..... 4 Trk, K-43.....16 Trk, K-44..... 8 Trk, 4-ton, cargo..... 4 Trk, 4-ton, wrecker..... 2	Normal assignment 1 or more per Com Z. May be assigned to Army or AF for Sp missions. Functions of unit include all types permanent or semi-permanent open wire or lead covered Cons. The Bn is capable of building complete a 10 to 16 mile perma- nent pole line carrying 2 open wire circuits in 1 working day. Has Hq and 2 Sig H Cons Cos. Wt (short tons): on wheels, 483; boxed, 531. Cubage (ship tons): on wheels, 3,328; boxed, 2,440.
7	Sig H Cons Co T/O 11-67 (13 Jan 44, C1, 2)	O..... 7 EM.....186 Agg.....193	Tlr, 1/4-ton..... 8 Tlr, 1-ton.....18 Tlr, 1 ton, water tank, 250 Gal..... 1 Tlr, K-36..... 2 Tlr, K-37..... 2 Tlr, K-38..... 2 Trk, 1/4-ton.....12 Trk, 3/4-ton, Wpn Carr..... 9 Trk, 2 1/2-ton.....15 Trk, 4-ton, 6x6, cargo..... 2 Trk, 4-ton, 6x6, wrecker..... 1 Trk, K-43..... 8 Trk, K-44..... 4	Function: to construct any type permanent or semi-permanent telephone or telephone line in- volving open wire or lead covered cable. Capacity: 5 to 8 miles per day per- manent pole line carrying 2 open wire circuits. Assignment: Normally to Com Z but may be requisitioned by an Army Comdr or AF Comdr for a specific task. Wt (short tons): on wheels, 228; boxed, 251. Cubage (ship tons): on wheels, 1,568; boxed, 1,162.

166. SIGNAL UNITS:

d. Detachments included in T/O & E 11-500 Signal Service Organization. These teams may be used to form units for specific missions or to augment T/O units.

(1) Administrative Units:

1	2	3	4
Unit	Personnel	Vehicles	Remarks
2	HEADQUARTERS TEAMS		
AA-Plat Hq	O..... 1 EM..... 1 Agg..... 2		2 or more teams of a strength of not less than 40 individuals, which operate as a component of a larger Adm Orgn and to which no officer is organically assigned.
AB-Plat Hq (Sep)	O..... 1 EM..... 4 Agg..... 5	Trk, ¾-ton, Wpn Carr..... 1	2 or more teams of a Str of not less than 40 individuals, which operate separately, and to which no officer is organically assigned.
AC-Co Hq	O..... 2 EM..... 9 Agg..... 11	Trk, ¼-ton..... 1 Trk, ¾-ton, Wpn Carr..... 1 Trk, 2½-ton, cargo..... 1	2 or more Plats, except that Co Str shall not be less than 100.
AD-Bn Hq	O..... 4 EM..... 14 Agg..... 18	Trk, ¼-ton..... 1 Trk, 2½-ton, cargo..... 1	3 to 6 Cos.
AE-Group Hq	O..... 7 EM..... 18 Agg..... 25	Trk, ¼-ton..... 1 Trk, 2½-ton, cargo..... 1	3 to 6 Bns.
3	MESS TEAMS		
AF	O..... 0 EM..... 4 Agg..... 4		40 to 100 individuals.
AG	O..... 0 EM..... 6 Agg..... 6		101 to 175 individuals.
AH	O..... 0 EM..... 8 Agg..... 8		176 to 225 individuals.
AI	O..... 0 EM..... 9 Agg..... 9		226 to 275 individuals.
AJ	O..... 0 EM..... 11 Agg..... 11		276 to 325 individuals.
4	AUTO MECHANIC TEAMS		
AK	O..... 0 EM..... 1 Agg..... 1	Trk, 2½-ton, cargo, w/w.... 1	Pers for 2d Ech Maint for 15 Veh
AL	O..... 0 EM..... 2 Agg..... 2	Trk, 2½-ton, cargo, w/w.... 1	Pers for 2d Ech Maint for 30 Veh

166. SIGNAL UNITS:

d. Signal Service Organization, T/O & E 11-500 (Continued) :

(2) Depot and Message Center Teams:

1	2	3	4
Unit	Personnel	Vehicles	Remarks
5	DEPOT TEAMS CA CB	Trk, ¼-ton, Wpn Carr..... 1 Trk, ¼-ton, Wpn Carr..... 1	Furnishes storage and issue and 4th Ech Rep of Sig Equip for units up to 5,000 men. Furnishes storage and issue and 4th Ech Rep of Sig Equip for units up to 15,000 men.
6	CC-Storage and Issue Team	Trk, ¼-ton, Wpn Carr..... 1	Furnishes storage and issue functions for units up to the size of 50,000 men.
7	CD-In-and Main-spection tenance Team	Tlr, 1-ton..... 1 Trk, ¼-ton, Wpn Carr..... 1 Trk, 2½-ton, Sig Corps, Rep..... 1	Specialized trained technicians to aid units with difficult Sig Maint problems through on-the-job dissemination of recent Maint practices, and instruction in the latest methods of Maint procedures.
8	MESSAGE CENTER TEAMS DA DB DC DD DE DF	Remarks—(Continued) Teams DA to DF: These teams are based on the number of 15 word cryptographed messages that can be processed in a 24 hour period where 50 percent of temessages are incoming and 50 percent outgoing.	Using Manual Systems Only up to 30 up to 80 up to 140 up to 300 up to 450 up to 600 Using Converter Only up to 45 up to 100 up to 200 up to 400 up to 600 up to 750
9	MESSENGER TEAMS DG DH	Trk, ¼-ton..... 3 Trk, ¼-ton..... 6	

166. SIGNAL UNITS:

*d. Signal Service Organization, T/O & E 11-500:**(2) Depot and Message Center Teams (Continued):*

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
10	DI-Msg Cen Clerk Aug- mentation	O..... 0 EM..... 6 Agg..... 6		Used in conjunction with the Rad TT code teams. Normally 1 such augmentation team will be used with the signal channel Rad TT Sta, Colm EP and multiples of this augmentation are necessary for the multi-channel Rad Sta, Colm EL and the multiplex Rad Sta, Colm EM.

(3) Crystal Grinding, Radar, and Radio Teams:

11	EA-Crystal Grinding	O..... 1 EM..... 3 Agg..... 4		Intended to provide theaters when the need for grinding and polishing of crystals is of such volume and frequency that the Sv from the ZI cannot meet the requirements.
12	EB-Mobile Radio	O..... 0 EM..... 5 Agg..... 5		Operates and maintains any Mbl Rad Instl.
13	EC-Radar Installation and Maintenance	O..... 0 EM..... 5 Agg..... 5		Basic radar Instl and Maint unit.
14	ED-Radio-Boehme operation augmentation Team	O..... 0 EM..... 5 Agg..... 5		Pers to operate a single channel Rad Sta equipped for Boehme type Opn.
15	EF-Radio carrier Terminal	O..... 2 EM..... 24 Agg..... 26	Trk, 1-ton..... 2 Trk, 1/4-ton..... 2 Trk, 2 1/2-ton, cargo..... 2	Pers for 2 Rad carrier terminals with associated wire carrier terminal Equip.
16	EG-Radio Repair	O..... 0 EM..... 9 Agg..... 9	Trk, 1-ton..... 1 Trk, 2 1/2-ton, cargo..... 1 Trk, 2 1/2-ton, Sig Corps Rep..... 1	4th Ech Rep and Maint of Rad Equip.
17	EH-Radio Telegraph fixed station 1-pos.	O..... 1 EM..... 6 Agg..... 7	Trk, 1/4-ton..... 2	Pers for the Instl, Opn, and Maint of a single channel, fixed Rad Sta, where the transmitter, receiver, and Opn Pt are situated in 1 location.

166. SIGNAL UNITS:

d. Signal Service Organization, T/O & E 11-500 (Continued):(4) *Radio, Fixed Stations Teams:*

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
18	RADIO TELEGRAPH FIXED STATIONS EI-2-Pos.	O..... 1 EM.....11 Agg.....12	Trk, ¼-ton..... 2	Instl, Maint, and Opn of a single-channel Boehme operated Rad Sta with the receiver and Opn Pos at one location and the transmitter remote controlled.
	FJ-3-Pos.	O..... 2 EM.....20 Agg.....22	Trk, ¼-ton..... 2	Instl, Maint, and Opn of a single-channel Boehme operated Rad Sta where the receiver, transmitter, and operation positions are all at Sep locations.
19	EK-VHF installation and maintenance	O..... 1 FM.....14 Agg.....15		Instl and Maint of VHF Rad Equip.
20	EL-40-kw multi-channel radio TT station	O..... 6 EM.....34 Agg.....40	Trk, ¼-ton..... 2	Maint and Opn of the transmitting, receiving, and Sig Cen Pos of a 40-kw Rad teletype Sta normally Sup 3 channels.
21	EM-40-kw multiplex radio TT station	O..... 6 EM.....33 Agg.....39	Trk, ¼-ton..... 2	Pers for Maint and Opn of the transmitting, receiving and Sig Cen Pos of a 40-kw 4-channel multiplex Rad teletype Sta.
22	EN-Sig Cen	O..... 3 EM.....18 Agg.....21		Pers experienced in both our own and friendly army Com procedure, Com Equip, and language. It is for use at an allied A Hq to expedite and simplify Com between our army and the allied army.
23	EO-Radio link repeater-terminal	O..... 0 EM..... 6 Agg..... 6		Employed for Rad link repeater Stas which must be used between terminals, team EF, either because of distance or terrain features. It can be used as a Rad link terminal in conjunction with spiral 4 cable team, GP.
24	EP-Single-channel radio TT station	O..... 2 EM.....19 Agg.....21	Trk, ¼-ton..... 2	Opn and Maint of the transmitting, receiving, and Sig Cen Pos of a single-channel fixed Rad TT Sta with power up to, but not including 40-kw.

166. SIGNAL UNITS:

*d. Signal Service Organization, T/O & E 11-500:**(4) Radio, Fixed Stations Teams (Continued):*

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
25	CODE ROOMS			
	EQ-Radio	O..... 3 EM..... 5 Agg..... 8		Pers for Opn and Maint of electro mechanical cryptographic Equip used in code room for a single-channel Rad TT Sta.
	TT			
	ER-main-tenance augmenta-tion	O..... 0 EM..... 1 Agg..... 1		Used to augment Rad TT code room team, EQ. Add 1 team, ER for each 2 additional Rad TT channels.
	ES-operation augmenta-tion	O..... 0 EM..... 4 Agg..... 4		Used to augment operators in Rad TT code room team, EQ. Add 1 team ES, for each additional Rad TT channel.

(5) Photographic Teams:

26	FA-Photo-graphic assignment	O..... 1 EM..... 4 Agg..... 5	Trk, 1/4-ton..... 2 Trk, 3/4-ton, Wpn Carr..... 1	Provided for taking of still or motion pictures in a combat area.
27	FB-Photo-graphic laboratory	O..... 2 EM..... 23 Agg..... 25	Tlr, M-18..... 1 Trk, 1/4-ton..... 1 Trk, 3/4-ton, Wpn Carr..... 1	Pers for a theater photographic Lab.
28	FC-Newsreel assignment	O..... 1 EM..... 6 Agg..... 7	Trk, 1/4-ton..... 1 Trk, 3/4-ton, Wpn Carr..... 2	Capable of taking both still and motion pictures, but its primary purpose is to take motion pictures in Com Z and CZ.
29	FD-Identifi-cation	O..... 0 EM..... 4 Agg..... 4		Take and process identification pictures only.
30	FE-Still picture laboratory	O..... 0 EM..... 5 Agg..... 5		Should process material of 2 FA teams and as many as 2 FC teams in addition. This team should not be used if Team "FB" is utilized.
31	FF-Tele-photo trans-mission	O..... 0 EM..... 5 Agg..... 5		Pers for the Instl, Opn and Maint of telephoto Equip at a single Sta.
32	FG-Photo-graphic mainten-ance	O..... 0 EM..... 3 Agg..... 3		4th and 5th Ech Maint of photo-graphic and projector Equip in in T of Opns.

166. SIGNAL UNITS:

d. Signal Service Organization, T/O & E 11-500:

(5) *Photographic Teams (Continued):*

	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
33	FH-Photographic production	O..... 6 EM.....10 Agg.....16	Trk, 1/4-ton..... 3 Trk, 3/4-ton, Wpn Carr..... 3	Basic photographic unit in the CZ for: a. Making motion picture reports on Pers, Mat, conditions and techniques in the development and proper use of all Wpns and means of warfare, for the use of staff agencies as authorized by the WD. b. Production of Sp features of news, publicity, and historical records of current campaigns, for public release and for training films when Atzd by the WD.
34	FILM AND EQUIPMENT EXCHANGES: FI-class A	O..... 2 EM..... 8 Agg.....10	Tlr, 1/4-ton..... 1 Trk, 1/4-ton..... 1	Consolidates all requests for films, projectors, and other Equip; maintains Dep stock of films; maintains stock control of all films and projectors for all film and Equip exchanges (FJ and FK) in theater. In addition, serves minimum of 75,000 Trs at THQ and other units not served by Cl B or Cl C film and Equip exchanges with projectors and films for training, orientation, entertainment, education or other designated purposes; and performs Cl B and Cl C film and Equip exchange functions in serving those Trs.
	FJ-class B	O..... 1 EM..... 6 Agg..... 7	Tlr, 1/4-ton..... 1 Trk, 1/4-ton..... 1	Serves 60,000 Trs with training, orientation, entertainment, education and other designated films, 16-mm motion picture and 35-mm film strip projectors; maintains and Rep films; performs 1st and 2d Ech projector Reps; and trains projectionists.
	FK-class C	O..... 0 EM..... 3 Agg..... 3	Tlr, 1/4-ton..... 1 Trk, 1/4-ton..... 1	Serves isolated units or schools of 10,000 strength, and performs the same functions as Cl B film and Equip exchange.

166. SIGNAL UNITS:

*d. Signal Service Organization, T/O & E 11-500 (Continued):**(6) Wire Operation Teams:*

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
35	SWITCHBOARD TEAMS			
	GA-40-line	O..... 0 EM..... 6 Agg..... 6	Trk, ¼-ton..... 6	Instl, Opn and Maint of small 1-Pos magneto type Sb including the Instl and Rep of telephones.
	GB-1-pos	O..... 0 EM..... 11 Agg..... 11	Trk, ¼-ton..... 1	Pers for operating and maintaining a 1-Pos magneto, or common battery Sb, including Instl and Rep of telephones.
	GC-2-pos	O..... 1 EM..... 21 Agg..... 22	Trk, ¾-ton, Wpn Carr..... 1	For the purpose of operating 2-Pos of magneto, or common battery Sb including Instl and Rep of telephones. This may be 2-Pos in Sep locations but in the same Gen Vic.
	GD-3-pos	O..... 1 EM..... 33 Agg..... 34	Trk, ¾-ton, Wpn Carr..... 1	For the purpose of operating and maintaining 3-Pos of manual or common battery Sb, including Instl and Rep of telephones. The 3-Pos may be in 3 different locations but in the same Gen Vic.
	GE-200-station automatic	O..... 1 EM..... 21 Agg..... 22	Trk, ¾-ton, Wpn Carr..... 1	For the purpose of maintaining a 200-Sta Auto Sb including Opn and Maint of a 1-Pos manual Sb. This team is capable of Instl and Rep of telephones and can handle step by step, crossbar or all relay type Sbs.
	GF-instal-lation	O..... 1 EM..... 16 Agg..... 17		For the purpose of making initial Instl of magneto, common battery or Auto Sbs of any size. The entire team may be used to install a large Sb or may be divided into as many as 4 teams for Instl of small boards.
	GG-operating	O..... 0 EM..... 3 Agg..... 3		For operating a small 1-Pos Sb or for augmenting one of the other Sb teams where additional operating Pers only are required.
	GH-operating	O..... 0 EM..... 9 Agg..... 9		For the purpose of operating a 3-Pos Sb or 3 1-Pos Sbs at different locations. It may be used to augment one of the other Sb teams where additional operating Pers only are required.

166. SIGNAL UNITS:

d. Signal Service Organization, T/O & E 11-500:

(6) *Wire Operation Teams (Continued):*

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
36	TELETYPE TEAMS			
	GI	O..... 0 EM..... 4 Agg..... 4		For the purpose of operating from 1 to 3 teletypewriters, depending on the amount of traffic being handled. The Instl and Maint of teletypewriters is not included.
	GJ	O..... 0 EM..... 9 Agg..... 9		For the purpose of Instl, Opn and Maint of from 3 to 6 teletypewriters, depending upon the amount of traffic handled.
	GK	O..... 1 EM.....17 Agg.....18		For the purpose of Instl, Opn, and Maint of from 5 to 10 teletypewriters, depending upon the amount of traffic being handled.

(7) *Wire Construction Teams:*

37	GM-Open wire repair	O..... 0 EM.....18 Agg.....18	Trk, ¾-ton, Wpn Carr, w/w4	Comprised of 4 crews, each capable of maintaining about 25 miles of local or toll open wire pole line.
38	GN-Telephone carrier and repeater	O..... 2 EM.....19 Agg.....21		Operates and maintains 2 terminal toll offices and 1 intermediate repeater Sta having from 1 to 10 3-channel carrier systems or 10 to 100 Tp repeaters including voice frequency Tg systems and power Equip.
39	GO-Telephone and installation Telegraph	O..... 1 EM.....17 Agg.....18		Install all special toll Equip such as test boards, Tp repeaters, carrier systems, Tg Equip, storage batteries and power plant.
40	GP-Spiral four cable	O..... 2 EM.....28 Agg.....30	Trk, ¼-ton..... 5 Trk, 2½-ton, cargo, w/w.... 2	Install, operate, and maintain, and repair a 100 mile spiral four cable system.
41	GQ-Wire equipment repair	O..... 0 EM.....10 Agg.....10	Tlr, 1-ton..... 1 Trk, 1½-ton, cargo..... 1 Trk, 2½-ton, Sig Corps, Gen Rep..... 1	4th Ech Rep and Maint of wire Equip.
42	GR-Submarine Cable	O..... 1 EM.....11 Agg.....12	Tlr, ¼-ton..... 1 Trk, ¼-ton..... 1	Operates and maintains a submarine cable terminal office having 1 terminating submarine cable. It may use siphon recorders or printers.

166. SIGNAL UNITS:

d. Signal Service Organization, T/O & E 11-500:

(7) Wire Construction Teams (Continued):

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
43	GS-Heavy wire construction	O..... 1 EM.....34 Agg.....35	Tlr, 1/4-ton..... 2 Tlr, 1-ton..... 3 Trk, 1/4-ton..... 2 Trk, 3/4-ton, Wpn Carr, w/w1 Trk, 2 1/2-ton, cargo, w/w.... 3 Tlr, K-36..... 1 Trk, K-43..... 2 Trk, K-44..... 1	For building a complete two-mile long, open wire pole line with 2 circuits during 1 normal working day.
44	GT-Light wire construction	O..... 0 EM.....11 Agg.....11	Tlr, 1-ton..... 1 Trk, 3/4-ton, Wpn Carr, w/w 1 Trk, K-43..... 2 Trk, K-44..... 1 Trk, 2 1/2-ton, cargo, w/w.... 1	Instl of field wire, rubber cable, & limited amount of open wire and the rehabilitation of existing open wire lines.
45	GU-Light wire Plat Hq	O..... 2 EM..... 9 Agg.....11	Tlr, 1/4-ton..... 3 Tlr, 1-ton..... 2 Trk, 3/4-ton, Wpn Carr, w/w 2 Trk, 1/4-ton..... 3 Trk, 2 1/2-ton, cargo, w/w.... 2	Comd and Sup Pers for any Org consisting of 3 to 6 teams GT
46	GV-Heavy wire Plat Hq	O..... 0 EM..... 6 Agg..... 6	Tlr, 1-ton..... 2 Trk, 3/4-ton, Wpn Carr, w/w 2 Trk, 2 1/2-ton, cargo, w/w.... 2	Pers for the Sup of 2 teams GS.
47	CABLE REPAIR TEAMS			
	GW	O..... 0 EM..... 4 Agg..... 4	Trk, 1/4-ton..... 2 Tlr, K-38..... 2	Pers for 2 cable splicing crews, each with complete Equip. This team can be used when team GX would be too large or to augment team GX.
	GX	O..... 0 EM.....11 Agg.....11	Trk, 3/4-ton, Wpn Carr, w/w 4 Tlr, K-38..... 4	Maintains and repairs about 25 miles of local or toll cable. May be used as a splicing team capable of making from 4 to 12 splices per day.

(8) Radio Installation Teams:

48	AIRWAY EQUIPMENT TEAMS		
	HA-instal- lation	O..... 1 EM.....12 Agg.....13	Installs a complete fixed airways Sta Com Instl.
	HB-main- tenance	O..... 0 EM..... 5 Agg..... 5	Performs major Maint and Rep on all airway Com Equip including certain 5th Ech work.
49	HC-Labor	O..... 0 EM.....15 Agg.....15	Sups laborers as required for Instl of fixed Rad Stas where local Civ labor cannot be used or QM Sv Trs are not available.

166. SIGNAL UNITS:

d. Signal Service Organization, T/O & E 11-500:

(8) *Radio Installation Teams (Continued):*

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
50	HD-Airway weather equipment	O..... 0 EM..... 4 Agg..... 4		Installs and provides major Maint for all Cls of Wea Stas required by the CG of the AF Wea Wg.
51	HE-Right of way construction	O..... 0 EM..... 2 Agg..... 2	Semi-Tlr, low bed, front loading, 20-ton..... 1 Tractor, crawler type, diesel, 70-90 DBHP, standard complete, w/bulldozer, tilting..... 1 Trk, 6-ton, prime mover w/w..... 1	Clears row for pole line circuits and aerial Instl and constructs temporary Rds incident thereto. This team will normally be assigned to a Sig Cons Bn but may be assigned to an Orgn along with Hv and L wire Cons teams GS and GT.
52	INSTALLATION HF-Wire equipment HG-Teletype	TEAMS O..... 0 EM..... 4 Agg..... 4 O..... 0 EM..... 1 Agg..... 1		Pers for installing the associated wire Equip used in conjunction with the Rad Sta. Provides 1 Tech for installing and placing the teletypewriter Equip in Opn when this type of Equip is employed.
53	HH-Power	O..... 0 EM..... 6 Agg..... 6		Performs all duties associated with the Instl of power Equip and Sup power lines to the Rad Equip.

(9) *Signal Intelligence Teams:*

54	TRAFFIC ANALYSIS TEAMS IA	O..... 1 EM..... 13 Agg..... 14	Tlr, 1-ton..... 1 Trk, ¼-ton..... 1 Trk, 2½-ton, cargo..... 2	Augments a Rad intercept Plat or team for the purpose of performing low level traffic analysis, cryptanalysis and translations of enemy Rad Com intercepted by the Plat or team.
	IB	O..... 3 EM..... 29 Agg..... 32	Tlr, 1-ton..... 1 Trk, ¼-ton..... 1 Trk, 2½-ton, cargo..... 2	Augments a Rad intercept Co for the purpose of performing traffic analysis, cryptanalysis and translations of enemy Rad Com intercepted by the Co.
55	IF-Machine cryptographic	O..... 1 EM..... 12 Agg..... 13		Pers and Equip for use in the cryptographic or cryptanalytic work which can be adapted to International Business Machine methods. This unit never operates independently but serves cryptographic production team IJ or IK.

166. SIGNAL UNITS:

d. Signal Service Organization, T/O & E 11-500:(9) *Signal Intelligence Teams (Continued):*

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
56	IG- Translators	O..... 1 EM..... 7 Agg..... 8		Designed to augment Rad intercept team IS or IT. The use of this team is dependent upon degree of success realized in cryptanalysis of enemy codes and ciphers contained in intercepted traffic.
57	CRYPTOGRAPHIC PRODUCTION AND DISTRIBUTION TEAMS IJ	O..... 2 EM..... 12 Agg..... 14	Tlr, 1-ton..... 1 Trk, 1/4-ton..... 1 Trk, 2 1/2-ton, cargo..... 1	Prepares and distributes Atzd cryptographic systems and cryptographic Mat for a task force Approx the size of an army, which is operating separately from a THQ. This team augments the Sig Int Sec of the task force in order to relieve the additional cryptographic burden imposed by having the task force operate the fixed Com as well as the Tact Com system.
	IK	O..... 3 EM..... 16 Agg..... 19	Tlr, 1-ton..... 1 Trk, 1/4-ton..... 1 Trk, 2 1/2-ton, cargo..... 1	Prepares and distributes Atzd cryptographic systems and Mat required for Com within the theater other than those normally furnished by the WD, exclusive of the lower level systems prepared within the Tac lower Ech. This team provides the basic unit required for establishing a new theater or operating a smaller theater.
58	CRYPTOGRAPHIC EQUIPMENT REPAIR TEAMS IL	O..... 0 EM..... 2 Agg..... 2	Trk, 3/4-ton, Wpn Carr..... 1	Pers, tools and spare parts for routine Maint inspection and 2d & 3d Ech Rep of electrical and mechanical cryptographic devices.
	IM	O..... 1 EM..... 6 Agg..... 7	Tlr, 1-ton..... 1 Trk, 3/4-ton, Wpn Carr..... 1	Pers, tools and spare parts for Maint and 3d Ech Rep of all types of mechanical and electrical cryptographic devices. This team is intended to be used in rear areas of the theater to maintain cryptographic machines used in enciphering Com for THQ and to augment the Mbl cryptographic Rep teams in Rep of damaged Equip.

166. SIGNAL UNITS:

d. Signal Service Organization, T/O & E 11-500:

(9) *Signal Intelligence Teams (Continued):*

	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
59	IN-Intelligence laboratory	O..... 2 EM..... 6 Agg..... 8		Basic Lab Orgn for performing duties such as processing Sig Int Mat, reproducing cryptographic Mat, examining Photo negatives or prints, and other similar duties as directed by the theater Comdr.
60	IO-Intercept and direction finder repair	O..... 0 EM..... 2 Agg..... 2	Trk, ¾-ton, Wpn Carr..... 1	Pers and Equip to maintain and Rep Rad and intercept receivers and D/F Equip.
61	CRYPTOGRAPHIC TEAMS			
	IP	O..... 1 EM..... 4 Agg..... 5	Trk, ¾-ton..... 1	Equip and Pers to operate cryptographic devices in a Hq. This team operates 2 converters.
	IQ	O..... 2 EM..... 15 Agg..... 17	Trk, ¾-ton, Wpn Carr..... 1	Performs similar duties to team IP, except that this team operates 4 converters, and in 2 Ech.s.
	IR	O..... 4 EM..... 24 Agg..... 28	Tlr, 1-ton..... 1 Trk, ¾-ton, Wpn Carr..... 1	Performs similar duties to teams IP and IQ, except that it operates 6 converters and operates in as many as 3 Ech.s.
62	RADIO INTERCEPT TEAMS			
	IS	O..... 1 EM..... 30 Agg..... 31	Tlr, 1-ton..... 2 Trk, ¾-ton, Wpn Carr..... 1 Trk, 2½-ton, cargo..... 2 Trk, 2½-ton, cargo, w/w.... 1	Intercept and copy enemy Rad Tg and is capable of portable operation from Veh. Analysis of any traffic taken must be done by other teams provided for that purpose.
	IT	O..... 1 EM..... 24 Agg..... 25	Tlr, 1-ton..... 1 Trk, ¾-ton..... 1 Trk, 2½-ton, cargo, w/w.... 1	Provides the same functions as Rad intercept team, IS, except for being less Mbl and designed for Opn of more sensitive receivers.
63	DIRECTION FINDER TEAMS			
	IU-mobile	O..... 0 EM..... 5 Agg..... 5	Trk, ¾-ton, Wpn Carr..... 1	Pers and Equip necessary to operate vehicular D/F and intercept Sta for the purpose of tracking down unauthorized and interfering Rad Sta.
	IV-portable	O..... 0 EM..... 4 Agg..... 4	Trk, ¾-ton, Wpn Carr..... 1 Trk, 2½-ton, cargo, w/w.... 1	Staffed and equipped to operate either highly portable or semi-fixed D/F over a continuous 24-hour period. They must always work in conjunction with and receive guiding Info from, Rad intercept teams, and Contl teams.

166. SIGNAL UNITS:

d. Signal Service Organization, T/O & E 11-500:(9) *Signal Intelligence Teams (Continued):*

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
64	IW-Intercept and direction finder control	O..... 2 EM..... 8 Agg.....10	Trk, 1/4-ton..... 1 Trk, 2 1/2-ton, cargo, w/w.... 1	Directs, and supervise the activities of 2 to 4 Sep or combined Rad intercept teams and 4 to 12 Rad D/F teams.

(10) *Security Teams:*

65	SECURITY TEAMS			
	SA	O..... 0 EM..... 7 Agg..... 7	Trk, 1/4-ton..... 1 Trk, 3/4-ton, Wpn Carr..... 2 Trk, 2 1/2-ton, cargo..... 1	Operates Sp Equip assigned the letter nomenclature of AN/MRQ-2.
	SD	O..... 0 EM..... 5 Agg..... 5	Trk, 1/4-ton..... 1 Trk, 3/4-ton, Wpn Carr..... 1 Trk, 2 1/2-ton, cargo..... 2	Operates Rad set SCR-193, or SCR-506, or Rad set SCR-284 or Rad set SCR-299 or SCR-399 as modified under the direction of Sig Security Branch, OCSigO.
	SF	O..... 0 EM..... 3 Agg..... 3	Trk, 1/4-ton..... 1 Trk, 3/4-ton, Wpn Carr..... 2	Operates Rad set SCR-543 as modified under the direction of Sig Security Branch, OCSigO. 2 of these teams may be used to operate 1 Rad Set SCR-508 or SCR-608 as modified under direction of Sig Security Branch, OCSigO.
	SG	O..... 0 EM..... 4 Agg..... 4	Trk, 1/4-ton..... 1 Trk, 3/4-ton, Wpn Carr..... 1 Trk, 2 1/2-ton, cargo..... 1	Operates Sp Equip assigned the letter nomenclature of AN/TPT-1.
66	SECURITY CONTROL TEAMS			
	SH	O..... 1 EM.....10 Agg.....11	Trk, 1/4-ton..... 1 Trk, 3/4-ton, Wpn Carr..... 1 Trk, 2 1/2-ton, cargo..... 2	Used to control not more than 3 security teams SA.
	SI	O..... 1 EM..... 5 Agg..... 6	Trk, 1/4-ton..... 1 Trk, 2 1/2-ton, cargo..... 1	Used to control 2 or more control teams SH.
	SJ	O..... 1 EM..... 4 Agg..... 5	Trk, 1/4-ton..... 1 Trk, 2 1/2-ton, cargo..... 1	Used to control security team SG.
67	SECURITY INVESTIGATION TEAMS			
	SK	O..... 0 EM..... 7 Agg..... 7	Trk, 2 1/2-ton, cargo..... 1	Used in conjunction with security team SA.
	SL	O..... 0 EM..... 5 Agg..... 5	Trk, 1/4-ton..... 1 Trk, 2 1/2-ton, cargo..... 1	Used in conjunction with security team SG.

166. SIGNAL UNITS:

d. Signal Service Organization, T/O & E 11-500:

(10) *Security Teams (Continued) :*

1	2	3	4
Unit	Personnel	Vehicles	Remarks
68	SECURITY MAINTENANCE TEAMS		
SM	O..... 0	Trk, ¼-ton..... 1	Performs Maint for 1 or more security teams SA.
	EM..... 6	Trk, 2½-ton, cargo..... 1	
	Agg..... 6		
SN	O..... 0	Trk, ¼-ton..... 1	Performs Maint for 1 or more security teams SG.
	EM..... 5	Trk, 2½-ton, cargo..... 1	
	Agg..... 5		
69	SO-Service detachment	O..... 1	Operates Rad receiver AN/APR-4 equipped with D/F antenna assembly AN/APA-24.
		EM..... 4	
		Agg..... 5	
		Trk, ¼-ton..... 1	
		Trk, 1-ton..... 1	
		Trk, ¼-ton..... 1	
		Trk, ¾-ton, Wpn Carr..... 1	

■ 167. TRANSPORTATION CORPS UNITS:

a. Port Units:

1	1	2	3	4																		
	Unit	Personnel	Vehicles	Remarks																		
2	Hq & Hq Co Major Port (Oversea) T/O & E 55-110-1 (20 Nov 43, C1, 2, 3)	O.....111 WO..... 1 EM.....408 Agg.....520	Tlr, 1/4-ton, cargo.....1 Trk, 1/4-ton.....5 <i>Remarks—(Continued)</i> Wt (short tons): on wheels, 19; boxed, 21. Cubage (ship tons): on wheels, 123; boxed, 83.	Provides Hq and Adm overhead for a Mbl PE or D as described in AR 55-75. The cargo capacity will be determined by the number of port Bns Atchd. Maximum capacity, as follows: <table><tr><td></td><td>Per</td><td>Max at</td></tr><tr><td>Cargo</td><td>Month</td><td>any</td></tr><tr><td>Pers.....</td><td>50,000</td><td>time</td></tr><tr><td>Anls.....</td><td>1,000</td><td>20,000</td></tr><tr><td>Sup (Ship Tons).....</td><td>300,000</td><td>1,000</td></tr><tr><td></td><td></td><td>200,000</td></tr></table>		Per	Max at	Cargo	Month	any	Pers.....	50,000	time	Anls.....	1,000	20,000	Sup (Ship Tons).....	300,000	1,000			200,000
	Per	Max at																				
Cargo	Month	any																				
Pers.....	50,000	time																				
Anls.....	1,000	20,000																				
Sup (Ship Tons).....	300,000	1,000																				
		200,000																				
3	Hq & Hq Co Medium Port (Oversea) T/O & E 55-120-1 (13 May 44, C1)	O..... 76 EM.....231 Agg.....307	Trk, 1/4-ton.....14 Trk, 3/4-ton, Wpn Carr.....141 Trk, 2 1/2-ton, cargo.....142 <i>Remarks—(Continued)</i> Wt (short tons): on wheels, 36; boxed, 40. Cubage (ship tons): on wheels, 240; boxed, 128.	Provides Hq and Adm overhead for a PE or D. Can supervise a port with maximum capacity as fol- lows: <table><tr><td></td><td>Per</td><td>Max at</td></tr><tr><td>Cargo</td><td>Month</td><td>any</td></tr><tr><td>Pers.....</td><td>25,000</td><td>time</td></tr><tr><td>Anls.....</td><td>500</td><td>10,000</td></tr><tr><td>Sup (Ship Tons).....</td><td>150,000</td><td>500</td></tr><tr><td></td><td></td><td>100,000</td></tr></table>		Per	Max at	Cargo	Month	any	Pers.....	25,000	time	Anls.....	500	10,000	Sup (Ship Tons).....	150,000	500			100,000
	Per	Max at																				
Cargo	Month	any																				
Pers.....	25,000	time																				
Anls.....	500	10,000																				
Sup (Ship Tons).....	150,000	500																				
		100,000																				
4	Hq & Hq Det, Port Bn T/O & E 55-116 (20 Mar 44)	O..... 4 WO..... 2 EM.....17 Agg.....23	Tlr, 1/4-ton.....1 Trk, 1/4-ton.....2 Trk, 3/4-ton, Wpn Carr.....1 Trk, 1 1/2-ton, cargo.....1	This Hq is capable of controlling 6 Port Cos. Bns will be organized in accordance with the local Sit. Assigned for Opns at a major PE or D. Wt (short tons): on wheels, 9; boxed, 10. Cubage (ship tons): on wheels, 50; boxed, 36.																		
5	Port Co T/O & E 55-117 (31 Jul 44, C1)	O..... 6 EM.....213 Agg.....219	Tlr, 1-ton, cargo.....1 Trk, 1/4-ton.....1 Trk, 1 1/2-ton, cargo.....1 Trk, 2 1/2-ton, cargo.....1 <i>Remarks—(Continued)</i> Wt (short tons): on wheels, 155; boxed, 171. Cubage (ship tons): on wheels, 336; boxed, 295.	This unit provides supervisory Pers and labor trained in loading and unloading vessels at ports. Un- loading capacity: 15 long tons per hour per hatch section, or 150 long tons per hour per Co (10 hatch sections). Normally as- signed for Opn at a major port.																		

167. TRANSPORTATION CORPS UNITS:

b. Railway Units:

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
2	Hq & Hq Co, MRS T/O & E 55-302 (4 May 44)	O..... 32 WO..... 2 EM.....165 Agg.....199	Trk, 1/4-ton.....3 Trk, 3/4-ton, Wpn Carr.....4 Trk, 2 1/2-ton, cargo.....1	This Hq controls or supervises Ry units in the T of Opns. Normally assigned to a T of Opns where a large rail net exists employing 2 or more Ry Grand Divs. Wt (short tons): on wheels, 18; boxed, 20. Cuhage (ship tons): on wheels, 111; boxed, 63.
3	Hq & Hq Co, Ry Grand Div T/O & E 55-202 (18 Mar 44, C1, 2)	O.....25 EM.....56 Agg.....81	Tlr, 1/4-ton, cargo.....1 Trk, 1/4-ton.....3 Trk, 3/4-ton, Wpn Carr.....2	This unit serves as an Adm Hq for from 2 to 4 Operating Bns, and 1 to 2 Shop Bns. Normally assigned to T of Opns as Adm Hq serving from 2 to 4 Ry Operating Bns and 1 to 2 Shop Bns. Wt (short tons): on wheels, 9; boxed, 10. Cuhage (ship tons): on wheels, 47; boxed, 39.
4	Ry Oper Bn T/O & E 55-225 (28 Oct 43, C1, 2)	O..... 26 EM.....789 Agg.....816	Tlr, 1/4-ton, cargo.....1 Tlr, 1-ton, cargo.....1 Tlr, Low Bed, 16-ton.....2 Tlr, Low Bed, 20-ton.....3 Trk, 1/4-ton.....3 Trk, 3/4-ton, Comd.....1 Trk, 3/4-ton, Wpn Carr.....6 Trk, 2 1/2-ton, cargo.....7 Trk, 2 1/2-ton, Dp.....6 Trk, 6-ton, Prime Mover.....2 Compressor, Trk Mtd.....3 Shovel, Crawler Mtd.....1 Trac, Angledozer.....2 Trac, Bulldozer.....2	Com Z and THQ units, Hq & Hq Sv Co, 1 Maint of Equip Co, 1 Maint of Way Co; 1 Trans Co. Operates and maintains Ry Div of 90 to 150 miles in length, without increase of Pers. The Bn can furnish crews for 20 to 24 trains each way per day, or a total of 40 trains per day. Wt (short tons): on wheels, 314; boxed, 345. Cuhage (ship tons): on wheels, 1,386; boxed, 1,141.
5	Ry Shop Bn T/O & E 55-235 (4 Oct 43, C1, 2, 3)	O..... 24 WO..... 2 EM.....625 Agg.....651	Trk, 1/4-ton.....1 Trk, 3/4-ton, Comd.....1 Trk, 3/4-ton, Wpn Carr.....5 Trk, 2 1/2-ton, cargo.....4	Com Z and THQ units, Hq & Hq Sv Co; 1 Erecting and Machine Shop Co; 1 Boiler and Smith Shop Co; 1 Car Rep Co. Operates heavy shops and executes major Rep of Ry Equip. The Bn can serve 2 Ry Operating Bns. Wt (short tons): on wheels, 87; boxed, 95. Cuhage (ship tons): on wheels, 381; boxed, 274.
6	Elec Power Transmission Co Hwy T/O & E 55-217 (28 Oct 43, C1, 2)	O..... 4 EM.....188 Agg.....192	Tlr, 1-ton, cargo.....2 Trk, 2 1/2-ton, cargo.....2	This Orgn is capable of maintaining electric power transmission on Approx 200 miles of electrified Ry.

167. TRANSPORTATION CORPS UNITS:

c. Highway Units:

1	2	3	4
Unit	Personnel	Vehicles	Remarks
2 I'q & Hq Co Hwy Trans Sv T/O & E 55-402T (7 May 45)	O..... 28 WO..... 1 EM.....101 Agg.....130	Trk, 1-ton, cargo.....2 Trk, 1/4-ton.....8 Trk, 3/4-ton, Wpn Carr.....1 Trk, 2 1/2-ton, cargo.....1	Provides Adm, planning, and supervisory Pers for coordination, direction and operational control of a Hwy Trans Sv. Assigned to a T of Opns or Comd as required for Opns within an area of the Com Z or for Opn of a major long-haul Trans line. Capacity: Varies with number of operating units. Normally 12 to 60 Trk Cos.

d. Miscellaneous Units:

2 Amph Trk Co T/O & E 55-37 (22 May 44, C1, 2, 3, 4)	O..... 7 EM.....173 Agg.....180	Trk, 1/4-ton..... 2 Trk, 3/4-ton, Wpn Carr..... 1 Trk, 2 1/2-ton, cargo..... 1 Trk, 2 1/2-ton, Amph.....50	Capable of operating on a 24-hour basis unloading Approx 1,000 to 1,500 tons of mixed cargo. On the average, 1 DUKW should discharge about 3 tons over a combined water-land distance of about 2 miles in Approx 1 hour. (6 ton-miles per hour.) Wt (short tons): on wheels, 357; boxed, 373. Cubage (ship tons): on wheels, 2,683; boxed, 2,647.
3 Base Depot Co T/O & E 55-260 (22 Mar 43)	O..... 5 EM.....116 Agg.....121	Semitrailer, 20-ton.....1 Trk, 1/4-ton.....1 Trk, 3/4-ton, Wpn Carr.....1 Trk, 2 1/2-ton, cargo.....1 Trk, 5-, 6-ton, Trac.....1 Crane, Trac Mounted.....1	Provides Adm supervision, clerical and warehouse Pers for Dep Opns. Normally assigned to a T of Opns as a Sv unit to a Major Port, Mbl (T/O 55-110-1) and located in base Sec. Consists of Co Hq; Dep Plat, and Sv Plat. Can operate independently. Capable of supervising warehousing and maintenance of stock records for cargo handled by 4 Port Cos—totaling 4,400 measurement-tons per day. Wt (short tons): on wheels, 48; boxed, 53. Cubage (ship tons): on wheels, 177; boxed, 124.

167. TRANSPORTATION CORPS UNITS:

d. Miscellaneous Units (Continued):

1	2	3	4
Unit	Personnel	Vehicles	Remarks
4 Hq & Hq Co Reg Sta T/O & E 29-22 (17 Sep 43, C1)	O..... 42 WO..... 1 EM.....141 Agg.....184	Trk, 1/4-ton.....4 Trk, 3/4-ton, Comd.....2 Trk, 3/4-ton, Wpn Carr.....1 Trk, 2 1/2-ton, cargo.....1	Controls Traf in the Com Z. It is the agency of the Theater Commander which provides for a systematic and orderly Mvmt of Sup and Repls to the CZ and Evac to the Rr of casualties, PW, and Salv from the CZ. Orgn includes Reg officers for rail, motor, air, and inland waterways (as required); includes officers from each Sup Sv, including Air.
5 Staging Area Co T/O 55-147 (9 Sep 44)	O..... 6 EM.....173 Agg.....179	Trk, 1/4-ton.....2 Trk, 3/4-ton, Wpn Carr.....4 Trk, 2 1/2-ton, cargo.....9	Provides messing facilities in PD & E in T of Opns. Capable of serving 4,000 individuals. Normally assigned to a major port installation.

e. Composite Service Organization.—T/O & E 55-500 (29 Sep 44, C1, 2):

(1) *Administrative:*

2	HEADQUARTERS	TEAMS:		
	AA	O..... 1		
	Plat Hq	EM..... 1		
	(Component)	Agg..... 2		
	AB	O..... 1	Tlr, 1/4-ton.....1	
	Plat Hq	EM..... 4	Trk, 3/4-ton, Wpn Carr.....1	
	(Sep)	Agg..... 5		
	AC	O..... 2	Tlr, 1/4-ton.....1	
	Co Hq	EM..... 9	Tlr, 1-ton.....1	
		Agg.....11	Trk, 1/4-ton.....1	
			Trk, 3/4-ton, Wpn Carr.....1	
			Trk, 1 1/2-ton.....1	
	AD	O..... 4	Trk, 1/4-ton.....1	
	Bn Hq	EM.....12	Trk, 3/4-ton, Wpn Carr.....1	
		Agg.....16		
	AE	O..... 4	Trk, 1/4-ton.....2	
	Gp Hq	EM.....17	Trk, 3/4-ton, Wpn Carr.....1	
		Agg.....21	Trk, 2 1/2-ton.....1	
				For Contl of 2 or more teams, except Plat strength not less than 40 individuals when an integral part of a Co.
				The equivalent of 2 or more teams except that Plat strength shall not be less than 40 individuals.
				The equivalent of 2 or more Plats except that Co strength shall not be less than 100 individuals.
				3 to 6 Cos.
				3 to 6 Bns. Also serves as Hq Inland Waterway Sv. When so used must be supplemented by teams FI, FJ, FK or FL. This Hq is designed to supervise or control Har Cft and small boat Cos and Civ units of an inland waterway system.
				Also serves as Hq Traf Regulation Gp. When so used the Hq will be supplemented by Pers of Traf regulation units as well as mess teams & Plat or Co Hq.

167. TRANSPORTATION CORPS UNITS:

e. Composite Service Organization(1) *Administrative (Continued):*

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
3	MESS TEAMS:			
	AF	EM..... 4 Agg..... 4		Feeds 40 to 100 individuals.
	AG	EM..... 6 Agg..... 6		Feeds 101 to 175 individuals.
	AH	EM..... 8 Agg..... 8		Feeds 176 to 225 individuals.
	AI	EM..... 9 Agg..... 9		Feeds 226 to 275 individuals.
	AJ	EM.....11 Agg.....11		Feeds 276 to 325 individuals.
4	AUTO MECHANIC TEAMS:			
	AK	EM..... 1 Agg..... 1		1 Mech per 15 Mtr Vehs (land).
	AL	EM..... 2 Agg..... 2		

(2) *Maintenance Units (Boat):*

5	MAINTENANCE & REPAIR TEAMS:			
	BA	O..... 2 EM.....31 Agg.....33	Trk, 2½-ton, Mach, shop....1 Trk, 2½-ton, cargo.....1	Normally included in small boat and Har Cft composite units.
	BB Maint Team	EM..... 8 Agg..... 8		Added when more engine Mechs are required.
	BC Rep Team	EM.....13 Agg.....13		Added when more of Hv skills are required.
	BD Port Marine Maint Sec	O..... 2 EM.....85 Agg.....87	Trk, ¾-ton, Wpn Carr.....1 Trk, 1½-ton.....1 Trk, 2½-ton, Mach shop....1 Trk, 2½-ton, cargo.....1	Normally Atchd to a port Hq.

(3) *Maintenance Units (Railroad):*

6	MAINTENANCE OF WAY SECTIONS:			
	BE	EM.....20 Agg.....20	Trk, 2½-ton Dp.....1	Maintains Approx 10 miles of right of-way.
	BF	O..... 1 EM.....57 Agg.....58	Trk, 2½-ton Dp.....2	Maintains Approx 30 miles of right of-way.

167. TRANSPORTATION CORPS UNITS:

e. Composite Service Organization:

(3) Maintenance Units, Railroad (Continued):

1	2	3	4
Unit	Personnel	Vehicles	Remarks
7	EQUIPMENT	MAINTENANCE CREWS:	
BG	EM..... 6 Agg..... 6		Equip Maint crews are adequate to make running Reps Approx as follows: 1 locomotive and 15 cars.
BH	O..... 1 EM.....18 Agg.....19		3 locomotives and 70 cars.
BI	O..... 2 EM.....35 Agg.....37		7 locomotives and 150 cars.
BJ	O..... 3 EM.....61 Agg.....64		15 locomotives and 300 cars.
7	BK Railway Work Shop Mbl	O..... 1 EM.....26 Agg.....27	Assembles rolling stock and makes Reps in Fwd areas. Normally Atchd one per railway grand Div.
8	HOSPITAL TRAIN: BL Maint Crew	EM..... 3 Agg..... 3	Rides each Hosp Tn to make running Reps.
	BM Maint Sec	O..... 1 EM.....24 Agg.....25	Makes light car Reps to Hosp Tns where shop Pers or other railway Maint units are not available to perform such Sv.

(4) Port Stevedore Units:

9	STEVEDORE SECTIONS:		
CA	O..... 1 EM.....19 Agg.....20		The Secs are capable of handling the following Approx tonnages: 15 long tons per hr.
CB	O..... 1 EM.....57 Agg.....58		45 long tons per hr.
CC	O..... 2 EM.....100 Agg.....102	Trk, ¾-ton, .....1	75 long tons per hr.

167. TRANSPORTATION CORPS UNITS:

e. Composite Service Organization (Continued):

(5) Amphibian Truck Units:

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
10	AMPHIBIAN TRUCK SECTIONS:			Transfers cargo from ship to shore Dps when piers are not available. The Secs are capable of moving the following daily tonnages: 280 tons.
	DA	O..... 1 EM..... 26 Agg..... 27	Trk, 2½-ton, Amph.....8	
	DB	O..... 1 EM..... 51 Agg..... 52	Trk, 2½-ton, Amph.....16	560 tons.
	DC	O..... 2 EM..... 80 Agg..... 82	Trk, 2½-ton, Amph.....24	840 tons.

(6) Supply Units:

11	WAREHOUSE TEAMS:			Provides Adm and Tech Pers to supervise receipt, storage and issue of TC Sups. When augmented by sufficient Sv Trs or Civ labor, teams are capable of processing daily shipments as follows: Equivalent of 10 carloads.
	EA	O..... 1 EM..... 20 Agg..... 21		
	EB	O..... 1 EM..... 34 Agg..... 35		Equivalent of 20 carloads.
12	LCL FREIGHT TEAMS:			Provides supervisory Pers to handle inbound and outbound freight less than carload shipments. Teams are capable of processing daily LCL shipments as follows 50 shipments.
	EC	O..... 1 EM..... 4 Agg..... 5	Trk, ¾-ton, Wpn Carr.....1	
	ED	O..... 1 EM..... 9 Agg..... 10	Trk, ¾-ton, Wpn Carr.....1	125 shipments.

167. TRANSPORTATION CORPS UNITS:

e. Composite Service Organization:

(6) *Supply Units (Continued) :*

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
13	SUPPLY DETACHMENTS:			
	EE	EM..... 4 Agg..... 4		Designed to serve the requirements of a Har Cft Co organized under T/O & E 55-500. Is normally assigned as an integral part of Har Cft Cos.
	EF	EM..... 8 Agg..... 8		Used when number of Har Cft team EE is unsuitable.

(7) *Traffic Regulation Units:*

4	AIR:			
	FA or FB	O..... 1 EM..... 4 Agg..... 5	Trk, ¼-ton.....1	Normally used in the coordination and control of Traf in: Sectors, Stas, Deps, Junctions, small cities and Adrms.
	FC	O..... 1 EM..... 4 Agg..... 5	Trk, ¼-ton.....1	Districts, sub-areas, medium sized cities and Adrms.
	FD	O..... 1 EM..... 4 Agg..... 5	Trk, ¼-ton.....1	Regions, areas and large Instls.
5	HIGHWAY:			
	FE or FF	O..... 1 EM..... 4 Agg..... 5	Trk, ¼-ton.....1	Normally used in the coordination and control of Traf in: Sectors, Stas, Deps, Junctions, small cities and Adrms.
	FG	O..... 1 EM..... 4 Agg..... 5	Trk, ¼-ton.....1	Districts, sub-areas, medium sized cities and Adrms.
	FH	O..... 1 EM..... 4 Agg..... 5	Trk, ¼-ton.....1	Regions, areas, and large Instls.

167. TRANSPORTATION CORPS UNITS:

e. Composite Service Organization:(7) *Traffic Regulation Units (Continued) :*

1	2	3	4
Unit	Personnel	Vehicles	Remarks
16 INLAND WATERWAYS:			
FI or FJ	O..... 1 EM..... 4 Agg..... 5	Trk, ¼-ton..... 1	Normally used in the coordination and control of traffic in: Sectors, stations, depots, Junctions, small cities and airports
FK	O..... 1 EM..... 4 Agg..... 5	Trk, ¼-ton..... 1	Districts, sub-areas, medium sized cities and airports.
FL	O..... 1 EM..... 4 Agg..... 5	Trk, ¼-ton..... 1	Regions, areas and large installations.
17 RAIL:			
FM or FN	O..... 1 EM..... 4 Agg..... 5	Trk, ¼-ton..... 1	Normally use in the coordination and control of traffic in: Sectors, stations, depots, Junctions, small cities and airports
FO	O..... 1 EM..... 4 Agg..... 5	Trk, ¼-ton..... 1	Districts, sub-areas, medium sized cities and airports.
FP	O..... 1 EM..... 4 Agg..... 5	Trk, ¼-ton..... 1	Regions, areas and large installations.

(8) *Train Operating Units:*

18	GA Tn Crew	EM..... 5 Agg..... 5		Operates 1 Tn on 1 shift.
19	GB Tn Operating Sec	O..... 1 EM..... 31 Agg..... 32		Operates 3 Tns on a 2 shift basis on either Rd or switching Sv.
20	STATION AGENCY DETACHMENTS:			
	GC	EM..... 11 Agg..... 11		Capable of operating a railway terminal with a capacity of 10 Tns per day.
	GD	EM..... 4 Agg..... 4		Capable of operating a small or medium size on-line way Sta.

167. TRANSPORTATION CORPS UNITS:

e. Composite Service Organization (Continued) :

(9) *Crews, Boats and Harbor Craft:*

1	2	3	4
Unit	Personnel	Vehicles	Remarks
1 TUG CREWS: HA	O..... 6 EM.....10 Agg.....16		Crew for 113 ft tug, steel, or 100 ft tug, steel, Navy, Std.
HB	O..... 3 EM..... 8 Agg.....11		Crew for 86 ft, 74 ft or 72 ft tug, steel.
2 HC Tug or F & P Vessel	O..... 1 EM..... 5 Agg..... 6		Crew for 65 ft tug, steel, Navy Std, or 65 ft F & P vessel, wood.
3 HD Cable Rep barge Diesel Har- bor lighter SP Cargo Barge	O..... 1 EM..... 6 Agg..... 7		Crew for 155 ft cable Rep barge, 125 ft Diesel harbor lighter, or 105 ft SP cargo barge, wood.
4 HE Harbor boat	O..... 3 EM..... 6 Agg..... 9		Crew for 96 ft harbor boat, wood.
5 HF Power Cruiser	O..... 4 EM..... 6 Agg.....10		Crew for 104 ft power cruiser.
6 BOAT CREWS: HG Mine Yawl Tow Boat HH Class A Boat	EM..... 2 Agg..... 2 O..... 6 EM.....13 Agg.....19		Crew for 26 ft mine yawl tow boat. Crew for Class A boats. Class A includes: Freight and passenger vessels, 125 ft to 190 ft. Ferry boats, 100 ft or over. Tankers, 150 ft to 199 ft. Tugboats, seagoing, 100 ft or over.
HI Class B Boat	O..... 5 EM..... 8 Agg.....13		Crew for Class B boats. Class B includes: Freight and passenger vessels under 125 ft. Ferry boats under 100 ft. Water boats. Barges, SP, 100 ft and over.
HJ Class C	EM..... 5 Agg..... 5		Crew for Class C boats. Class C includes: Mtr launches over 50 ft. Barges, SP, under 100 ft.

167. TRANSPORTATION CORPS UNITS:

e. Composite Service Organization:(9) *Crews, Boats and Harbor Craft (Continued) :*

1	1	2	3	4
	Unit	Personnel	Vehicles	Remarks
	HK Class D	EM..... 3 Agg..... 3		Crew for Class D boats. Class D includes: Mtr launches, 50 ft and under. Tow boats, 50 ft and under. For Maint planning purposes all boats and harbor craft will be classified as Class A, B, C or I as defined.

(10) *Crews, Propulsion Units, Cranes and Barges:*

27	MARINE TRACTOR CREWS:		
	IA	EM..... 2 Agg..... 2	Crew for marine Trac, single unit
	IB	EM..... 3 Agg..... 3	Crew for marine Trac, twin tug.
28	IC Outboard Motor	EM..... 2 Agg..... 2	Crew for large type outboard Mt used for barge propulsion.
29	FLOATING CRANE CREWS:		
	ID	O..... 1 EM..... 4 Agg..... 5	Crew for 15-ton (90 ft barge) crane 30-ton (61 ft barge) crane, or 30 ton (112 ft barge) crane.
	IE	O..... 1 EM..... 5 Agg..... 6	Crew for 60-ton (110 ft barge crane.
	IF	O..... 1 EM..... 6 Agg..... 7	Crew for 100-ton (140 ft barge crane, revolving.
30	CARGO BARGE CREWS:		
	IG	EM..... 2 Agg..... 2	Crew for all cargo barges, 50 ft to 199 ft.
	IH	EM..... 3 Agg..... 3	Crew for 203 ft barge, wood, 210 ft barge, steel, or 265 ft barge, con crete.
31	REFRIGERATION BARGE CREW:		
	II	EM..... 4 Agg..... 4	Crew for 104 ft barge, Refrigerator

■ 168. SERVICE TROOP REQUIREMENTS—COMBAT ZONE:

a. *Basis for computing Chemical Warfare Service Troop requirements in the Combat Zone:*¹

1	2	3	4
	<i>Unit</i>	<i>T/O & E</i>	<i>Corps of 3 Divs</i> <i>Army of 3 Corps</i> ²
2	Cml Mort Bn.....	3-25	3
3	Cml Smoke Generator Co.....	3-267	2
4	Cml Dep Co.....	3-67	1
5	Cml Maint Co ³	3-47	1
6	Cml Decontamination Co.....	3-217	1 ⁴
7	Cml Warfare Gen Sv Co ⁵	3-137S	1
8	Cml Processing Co.....	3-77	1 ⁴

¹ This merely shows a typical organization; actual organization is *extremely flexible*. It should *not* be construed as the normal organization of any specific unit. Corps and Armies should consist of *needed units*, rather than a fixed organization.

² Numbers under Army do not include units allotted under Corps.

³ Furnishes maintenance for 3 Cml Bns in C Z.

⁴ Additional when gas warfare exists.

⁵ Army Depot in non-gas warfare conditions. This unit can also furnish chemical services to a Task Force.

168. SERVICE TROOP REQUIREMENTS—COMBAT ZONE:

b. Basis for computing Engineer Troop Requirements—Combat Zone:

	1	2	3	4	5	6	7
1	Unit	T/O & E	Inf Div	Armd Div	Abn Div	Corps of 3 Divs ²	Army of 3 Corps ²
2	Engr C Bn.....	5-15	1 ³			6	9
3	Armd Engr Bn.....	5-215		1 ³			
4	Abn Engr Bn.....	5-225			1 ³		
5	Engr Hq, Army.....	5-200-1					1
6	Hq & Hq Co, Engr C Gp.....	5-192				2	4
7	Engr Topo Co, Corps.....	5-167				1	
8	Engr Topo Bn, Army.....	5-55					1
9	Engr Panel Br Trans.....	5-287				1	3
10	Engr Treadway Br Co.....	5-627				2	
11	Engr Pon Br Co.....	5-297					6
12	Engr Cam Bn, Army.....	5-95					1
13	Engr W Sup Co.....	5-67					3
14	Engr L Equip Co.....	5-367				2	6
15	Engr Dp Trk Co.....	5-88				1	5
16	Engr Maint Co.....	5-157				1	6
17	Engr Gen Sv Regt.....	5-121					3 ⁴
18	Hq & Hq Co, Engr Cons Gp.....	5-72					3 ⁴
29	Engr Dep Co.....	5-47					2
20	Engr Sp Brig.....	5-510S				1 ⁵	
21	Engr Det Sv, Utilities.....	5-500					1 ⁶
22	Engr Det Sv, Model Making.....	5-500					1
23	Engr Det Sv Map Depot Team No. 1.....	5-500					1

¹ This merely shows a typical organization; actual organization is *extremely flexible*. It should *not* be construed as the normal organization of any specific unit. Corp and Armies should consist of *needed units*, rather than a fixed organization conforming to the above.

² Numbers do not include units allotted to components; i.e. Corps figures do not include divisions figures.

³ Organic to the division.

⁴ Either Gen Sv Regts of 3-Bns or Cons Gps of 3-Cons Bns. Not both.

⁵ Provided as necessary. May be assigned or attached to division for shore-to-shore operations.

⁶ To be composed of:

- 1 GF Reproduction Team
- 1 GE Survey Tn Team
- 1 DF Mbl SL Maint Det
- 4 FA Fire Fighting Teams
- 16 FC Fire Trailer Teams
- 1 EB Utilities Det

168. SERVICE TROOP REQUIREMENTS—COMBAT ZONE:

*c. Basis for computing Medical Troop requirements—Combat Zone:*¹

	1	2	3	4	5	6	7	8
	Unit	T/O & E	Inf Div	Armd Div	Abn Div	Engr Sp Brig	Corps ² of 3 Divs	Army ² of 3 Corps
2	Med Bn.....	8-15	1 ³					
3	Armd Med Bn.....	8-75		1 ³				
4	Abn Med Co.....	8-37T			1 ³			
5	Med Bn, Engr Sp Brig.....	8-195S				1 ³		
6	Hq & Hq Det, Med Gp.....	8-22						3
7	Hq & Hq Det, Med Bn, Sep.....	8-26					1	2-3
8	Med Coll Co, Sep.....	8-27	1	1			1	2
9	Med Clr Co, Sep.....	8-28	1	1			1	2
0	Med Amb Co, Mtr, Sep.....	8-317	1	1			1	2
1	Med Gas Treatment Bn.....	8-125						(⁴)
2	Med Sn Co.....	8-117					1	1
3	Field Hosp.....	8-510					1	1
4	Portable Surgical Hosp.....	8-572	3	3	3		1	
5	Evac Hosp (750 bed).....	8-580	1/3	1/3	1/3			
6	Evac Hosp, Sem.....	8-581	1	1				
7	Conv Hosp.....	8-590						1
8	Med Dep Co, CZ.....	8-667						2-3
9	Med Lab.....	8-500						1
0	N P Hosp.....	8-500						1

This merely shows a typical organization; actual organization is *extremely flexible*. It should *not* be construed as the normal organization of any specific unit. Corps and Armies should consist of *needed units*, rather than a fixed organization conforming to the above.

Numbers do not include units allotted to components; i.e. Corps figures do not include division figures.

Organic units.

To be provided as required and authorized by the theater commander.

168. SERVICE TROOP REQUIREMENTS—COMBAT ZONE:

d. Basis for Computing Ordnance Troop Requirements—Combat Zone:^{1 2 3 4}

	1	2	3	4	5	6	7	8	9	10
		Maintenance						Supply		
1		M Maint Co	Hv Maint Co F Army	Hv Maint Co Tk	M Auto Maint Co	Hv Auto Maint Co	Maint Co AA	Am Co	Dep Co	Evac Co
2	T/O & E	9-7	9-9	9-37	9-127	9-197	9-217	9-17	9-57	9-187
3	Inf Div.....	1.0	0.25			0.25		0.5	0.4	
4	Abn Div.....	0.5	0.15		0.1			0.3	0.2	
5	Armd Div.....			1.0		0.5		1.0	1.0	1.0
6	Tank Bn (Sep).....			0.3				0.1	0.1	0.1
7	TD Bn (SP).....			0.25				0.1	0.1	0.1
8	TD Bn (Towed).....	0.2	0.1					0.1	0.05	
9	FA Bns (Lt & Med) Trk Dr.....	0.1	0.05			0.02		0.1	0.03	
10	FA Bns (Lt & Med) Tractor Dr.....	0.1		0.15				0.1	0.03	
11	FA Bns (Hv) Trk Dr ⁴	0.1	0.1			0.02		0.1	0.05	
12	FA Bns (Hv) Tr Dr ⁵	0.1	0.1	0.1				0.1	0.05	
13	CA Bns (Mbl).....	0.1	0.1					0.1	0.05	
14	AA Bns (Gun & AW).....		0.04		0.04	0.02	0.2	0.04	0.04	
15	Engr Bns (Combat).....				0.1	0.05				
16	Bns (Sig, Engr, Med, Cml & Misc).....				0.14	0.07				
17	QM Trk & Tr Trans Cos.....				0.06	0.03				

¹ Other units as necessary on a comparative basis.

² Bn Hq (T/O & E 9-76) 1 per 2 to 5 Cos.

³ Gp Hq as necessary and authorized.

⁴ This table shows the approximate ratio for the proper balance in field assignment of ordnance units in the combat zone. In specific cases it is subject to the necessary judgment as dictated by conditions.

⁵ 155-mm Gun Bns and heavier.

168. SERVICE TROOP REQUIREMENTS—COMBAT ZONE:

e. Basis for Computing Quartermaster Troop Requirements—Combat Zone:^{1 2}

	1	2	3	4	5	6	7
1	Unit	T/O & E	Inf Div	Armd Div	Abn Div	Corps ³ of 3 Divs	Army ³ of 3 Corps
2	QM Co, Inf Div.....	10-17	1 ⁴				
3	Abn QM Co.....	10-327T			1 ⁴		
4	QM Trk Co.....	10-57		2	2	2	24
5	QM Car Co.....	10-87				$\frac{1}{4}$	1
6	QM Sv Co.....	10-67				1	12
7	Hq & Hq Det, QM Gp.....	10-22					4 ⁵
8	Hq & Hq Det, QM Bn, Mbl.....	10-56					4 ⁶
9	Hq & Hq Det, QM Bn (Sq).....	10-536					12 ⁷
10	QM War Dog Plat.....	10-397T					2
11	QM Bakery Co.....	10-147					5
12	(QM Bakery Co Mbl, Sp).....	(10-147S)					(4)
13	QM Sales Co, Mbl ⁸	10-157				$\frac{1}{2}$	$\frac{1}{2}$
14	QM Laundry Co, Sem.....	10-167				1	6 ⁹
15	QM Fumigation & Bath Co (Mbl).....	10-257					8 ⁹
16	(QM Sterilization Co).....	(10-177)					(10)
17	QM Salv Coll Co.....	10-187	$\frac{1}{3}$	$\frac{1}{3}$	$\frac{1}{3}$		1
18	QM Rhd Co.....	10-197	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	2
19	QM Dep Co, Sup.....	10-227					4
20	QM Salv Rep Co (Sem).....	10-237					4
21	QM Graves Registration Co.....	10-298	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	$\frac{1}{4}$	1
22	(QM Graves Registration Co).....	(10-297)	($\frac{1}{4}$)	($\frac{1}{4}$)	($\frac{1}{4}$)	($\frac{1}{4}$)	(1)
23	QM Gas Sup Co.....	10-77	$\frac{1}{2}$	1		1	2

¹ Submitted as a guide only. Actual requirements will determine the number and type of units to be found within a Corps or Army.

² Figures in parenthesis represent alternate units to those found in the line above.

³ Figures do not include units allotted to components; i.e. Corps figures do not include division figures.

⁴ Organic to division.

⁵ As required for control of 4 or more battalions or equivalent in separate companies.

⁶ As required for control of 2-6 QM Truck Companies.

⁷ As required for control of from 3-6 QM Companies (Troops).

⁸ Where Post Exchange facilities are not available.

⁹ Includes operations for troops and salvage. Baths for troops at least once every two weeks.

168. SERVICE TROOP REQUIREMENTS—COMBAT ZONE:

*f. Basis for Computing Signal Corps Troop Requirements:*¹

	1	2	3	4	5	6	7
1	Unit	T/O & E	Inf Div	Armd Div	Abn Div	Corps ² of 3 Divs	Army ² of 3 Corps
2	Sig Co, Inf Div.....	11-7	1 ³				
3	Armd Sig Co.....	11-57		1 ³			
4	Abn Sig Co.....	11-557T			1 ³		
5	Sig Bn.....	11-15				1 ³	
6	Sig Opn Bn.....	11-95					1
7	Sig L Cons Bn.....	11-25					1
8	Sig Dep Co.....	11-107					1
9	Sig Rep Co.....	11-127					1
10	Sig Rad Int Co.....	11-77					1
11	Sig Info and Monitoring Co.....	11-87S					1
12	Sig Photo Co.....	11-37					1
13	Sig Pgn Co.....	11-39					1
14	Joint Aslt Sig Co.....	11-147S	1 ⁴				
15	Sig Hv Cons Bn.....	11-65					1

¹ A guide only. Actual requirements will determine the number and type of units to be found within Corps and Armies.

² Does not include units allotted to companies: i.e. Corps figures do not include Division figures.

³ Organic.

⁴ For amphibious operations only.

Chapter 2

TROOP MOVEMENTS

SECTION		Paragraph
I.	Troop Movements—General	201-205
II.	Motor Movements	206-216
III.	Administrative Rail Movements	217-225
IV.	Rail Movements in Theater of Operations	226-228
V.	Movements by Air Transport	229-236
VI.	Troop Movements—Water	237-244



TROOP MOVEMENTS

SECTION I

TROOP MOVEMENTS—GENERAL

■ 201. INTRODUCTION. — *a. Basic road spaces.* — Troop movement data shown in basic tables of road spaces, rates and lengths of marches, are averages from field experience.

b. Examples.—The examples of tables of road spaces and troop movements by motor transport, for various types of divisions are based on Tables of Organization strength and are included as guides for the preparation of similar tables for units in the field. Tables for field use must conform to the variations of strength of units and the amount of transportation and equipment available. Regiments, separate battalions, and similar units should maintain tables showing road space requirements of their units based on actual strength and materiel on hand. Reports of subordinate units form the basis for tables of large units. However, a table based on actual strength of men and material may be worthless without proper evaluation of the weather, road conditions, hostile or mechanized threats, or other variable factors affecting the troop movement. These basic figures are capable of great increase or decrease under extremes of the variable factors:

■ 202. BASIC ROAD SPACES.—The following values apply in computing road spaces except when greater dispersion is desired to reduce the effect of unfavorable factors mentioned in Par 201 *b* above:

*a. Foot troops (at halt or marching):*¹

	<i>Yards</i>
Single file, per man	2.4
In column of twos, per man	1.2
In column of threes, per man	.8
In column of fours, per man	.6

*b. Animal elements (at halt or marching):*¹

Cavalry:	<i>Yards</i>
Single file, per animal	4.0
In column of twos, per animal	2.0
In column of fours, per animal	1.0
For large units, columns of twos	3.0
For large units, columns of fours	1.5
FA, H-Dr:	
Per animal	3.0

¹For time length of foot and animal elements in column see Par 203.

202. BASIC ROAD SPACES (Continued) :*c. Motor elements (at halt):²*

Passenger cars -----	7.0
Trucks: 1/4-ton -----	5.0
1/4-ton w/cargo Tlr or Wpn in Tow -----	8.0
1/2 to 3/4-ton -----	7.0
1/2 to 3/4-ton w/cargo Tlr or Wpn in tow ---	12.0
1 1/2 to 2 1/2-ton incl -----	10.0
1 1/2 to 2 1/2-ton w/cargo Tlr or Wpn in tow _	14.0
Over 2 1/2-ton -----	13.0
Over 2 1/2-ton w/cargo Tlr or Wpn in tow _	20.0

Average per vehicle for a mixed column of various types ----10.0

²For road spaces and time lengths for motor elements at various speeds see Par 210.

e. Uses of tables:

(1) A battalion of infantry with 800 men marching in column of threes: $800 \times .8$ (see *a* above) = 640 yards road space.

(2) A battalion of field artillery, horse drawn, containing 400 animals: 400×3 (see *b* above) = 1,200 yards road space.

(3) A mixed motor column consisting of:

20 scout cars @ 8 yards each -----	160 yards
20 trucks, 1/4-ton w/Wpn in tow @ 8 yards each -----	160 yards
25 trucks, 3/4-ton w/Tlr in tow @ 12 yards each -----	300 yards
75 trucks, 1 1/2-ton @ 10 yards each -----	750 yards
40 trucks, 2 1/2-ton w/Tlr in tow @ 14 yards each -----	560 yards
40 tanks (M) @ 8 yards each -----	320 yards

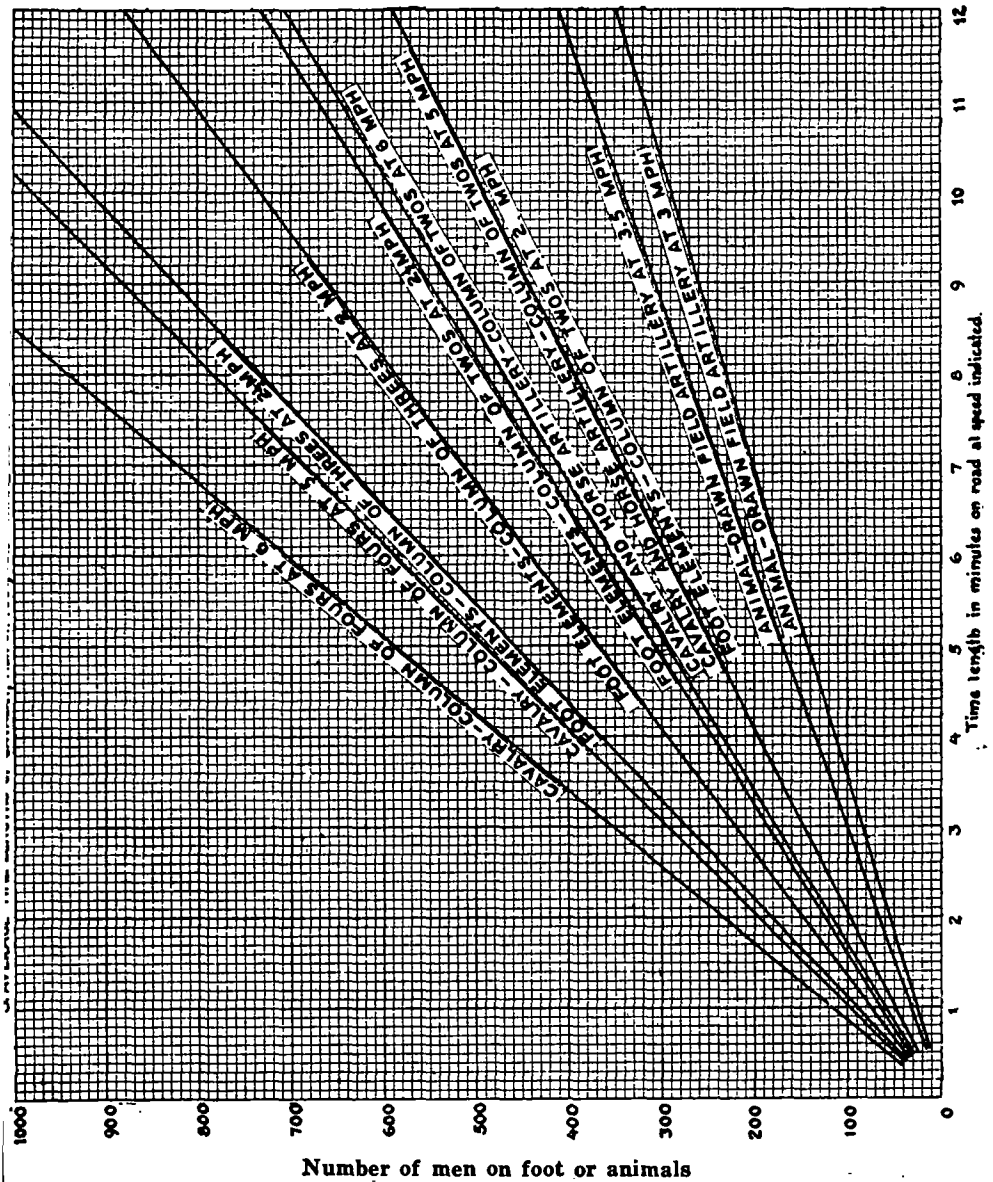
220 Total

Total Road Space at halt -----2,250 yards

Alternate solution: (see Sub Par *c* above)

220 vehicles (mixed) @ 10 yards each -----2,200 yard

■ 203. AVERAGE TIME LENGTHS OF CAVALRY, MEN ON FOOT, AND ANIMAL-DRAWN FIELD ARTILLERY COLUMNS. (See Notes on page 6.)



NOTES

This chart applies to columns of foot and animal elements.

This chart gives average time-length. Actual time-length may vary considerably, depending on conditions.

To use chart:

Determine the number of men on foot or animals in the column.

Locate this figure in vertical scale on left of chart.

Follow horizontal line to right to intersection with diagonal line indicating the proper foot or animal column and rate of travel.

From this intersection follow vertical line down to horizontal scale.

Read on horizontal scale average time-length of the column.

■ 204. RATES AND LENGTHS OF MARCHES; FOOT, ANIMAL, AND MOTOR ELEMENTS. ¹—*a*. The following rates and lengths of marches are based upon modern vehicles, trained personnel, and favorable conditions of roads and weather:

	1	2	3	4	5	6 ²	7
1	Unit	Average rates of march (mph) (¹)				Lengths of March (average)	Remarks
		On roads		Across country		On roads (miles per day)	
		Day	Night	Day	Night		

INFANTRY³

2	Foot troops	2½	2	1½	1	12-15 for a division 15-20 for smaller units	Length of march increased with well seasoned trs marching on good roads in favorable weather when required by the tactical situation. ⁴
---	-------------	----	---	----	---	---	---

ARTILLERY¹

3	Horse-drawn	3½	3	3	2	20	
4	Pack (less motor elements)	3½	3	3	2	20	
5	Trk-Dr, L or M	25	25 (lights) 10 (no lights)	8	5	175	
6	Tr-Dr, M (M5)	21	15 (lights) 8 (no lights)	10	4 (lights) 1½ (no lights)		
7	Trk-Dr, Hv	18	18 (lights) 10 (no lights)	6	4	135	
8	Tr-Dr, Hv	15	15 (lights) 8 (no lights)	6	4 (lights) 1½ (no lights)	135	
9	AAA, Trk-Dr	25	25 (lights) 10 (no lights)	8	5	175	
10	AAA, SP	25	25 (lights) 10 (no lights)	12	5	175	

204. RATES AND LENGTHS OF MARCHES; FOOT, ANIMAL, AND MOTOR ELEMENTS.¹ (Continued):

	1	2	3	4	5	6	7
1	Unit	Average rates of march (mph) (⁴)				Lengths of March (average)	Remarks
		On roads		Across country		On roads (miles per day)	
		Day	Night	Day	Night		
CAVALRY							
1	Anl elements	6	5	5	4	35	Under conditions requiring maneuver, these rates may be increased.
2	Cars, armored or scout	35	35 (lights) 10 (no lights)	10	5	200	
ARMORED							
3	Tanks, L	25	25 (lights) 10 (no lights)	15	5	150	Armored division moves at rate of march of medium tanks.
4	Tanks, M	17	17 (lights) 10 (no lights)	12	5	150	
MISCELLANEOUS							
5	Pk Tns	3½	3	3	2	20	
6	Anl-Dr Tns	3½	3	1½	1	20	
7	Trks, Ambs, Mtz units (except Hv Arty)	25	25 (lights) 10 (no lights)	8	5	175	
8	Cars, passenger	35	35 (lights) 10 (no lights)	8	5	250	

The rate of march of a column composed of elements with different rates of march is regulated by that of the slowest element.

² Greater distances than those given in column 6 may be covered under forced march conditions. (See paragraph 205.)

³ Horse artillery marches at the rates of horse cavalry (line 11).

⁴ Rates shown apply primarily to movement in close column, and may be increased for small commands under favorable conditions.

⁵ For movement over mountainous terrain, an additional allowance of 1 hour should be made for each 1,000 feet of climb.

⁶ Average rates of march for motorized elements listed in columns 2 and 3 are possible only on improved roads.

b. Marches in snow and extreme cold.—(1) Foot troops marching in snow without snowshoes or skis will have their mobility decreased. The decrease of mobility will depend on several factors, among which are depth and nature of the snow. Normally, snow of a depth of 24 inches or more will prohibit marching unless skis or snowshoes are used.

204. RATES AND LENGTHS OF MARCH (Continued) :

For especially equipped and adequately trained troops, the following rates of march are practicable:

Snowshoes	-----1½ to 2½ miles per hour
Skis	-----1½ to 3½ miles per hour

Under favorable conditions the foregoing may be materially increased. Small bodies of well trained troops are capable of moving on skis 40 miles a day, under favorable conditions.

(2) *Dog teams*.—Average dog teams of 7 dogs and hauling a 500-pound load are capable of moving 5 to 7 miles per hour for 6 to 7 hours daily, an average day's march being approximately 30 miles.

(3) *Motor movement (wheel) in snow:*

Depth of snow (inches)	Measures required for movement
3 -----	None
6 -----	Rear chains
6-18 -----	Chains all-around; and special tractor devices on leading vehicle (to break the trail)
18 and over -----	Snow plow required

■ 205. FORCED MARCHES; FOOT AND ANIMAL ELEMENTS.—*a. General:* Seasoned troops and animals when well rested at the beginning of the march, with good weather and good roads, are capable of reaching their destination physically fit to engage in combat after making forced marches as indicated on the graph on the following page.

b. Examples of use of graph.—Assume it is desired to start a column of foot troops at daylight and accomplish a march of 33 miles. The graph shows that this distance will require a minimum elapsed time of 22½ hours. Such a march might be divided as follows:

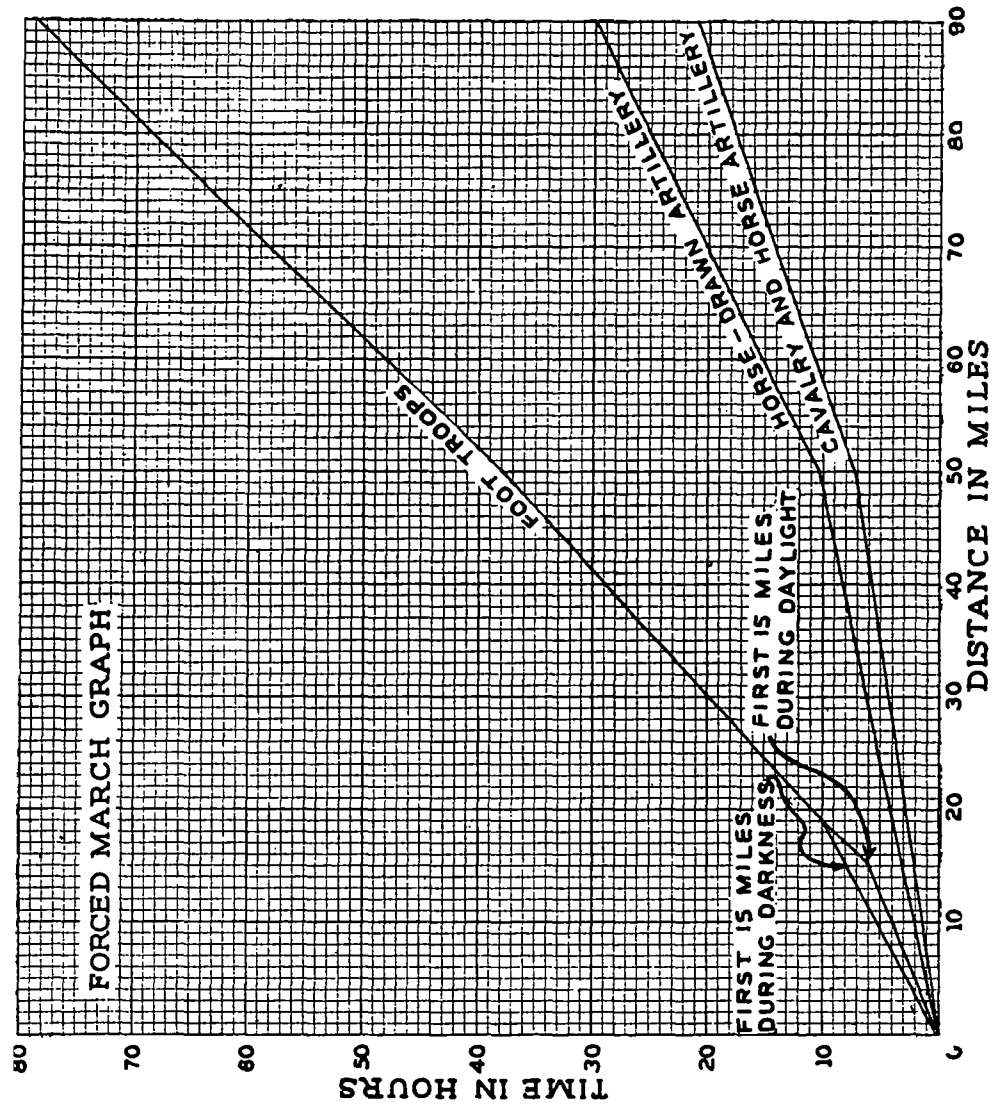
Total elapsed time	-----22½ hrs
First stage, 18 miles. At 2½ miles per hour (daylight, on roads) and allowing for a noon halt of about 1½ hours, the time re- quired for this stage is	9 hrs
Second stage, 15 miles. At 2 miles per hour (night, on roads) the time required for this stage is	7½ hrs
Total for both stages	-----16½ hrs

Available for a long rest halt between stages ----- 6 hrs

The forced march could be divided into three or more stages instead of two, in which case two or more long rest halts totaling six hours could be scheduled.

205. FORCED MARCHES; FOOT AND ANIMAL ELEMENTS (Continued) :

c. *Forced March Graph.*—The most important point to be kept in mind when planning forced marches is that the *rate of march* is *not* increased. The increase is in the number of marching hours per day.





SECTION II

MOTOR MOVEMENTS

206. VEHICLE CAPACITIES.—*a. Truck capacities for troop movement.*—The capacity of motor transportation for movement of foot troops depends upon the rated capacity of the transportation employed, the type of body on the vehicles, and the method of carrying personnel. Normal capacities for trucks carrying personnel with rifles, packs, and extra ammunition, with no additional cargo:

	<i>Men</i>
Truck, $\frac{1}{4}$ -ton (excluding driver) -----	3
Truck, $\frac{1}{2}$ -ton (excluding driver) -----	5
Truck, $\frac{3}{4}$ -ton (excluding driver) -----	8
Truck, $1\frac{1}{2}$ -ton (excluding driver) -----	15
Truck, $2\frac{1}{2}$ -ton (or larger) (excluding driver) -----	25

NOTE

When $2\frac{1}{2}$ -ton dump truck or $2\frac{1}{2}$ -ton short wheel base artillery trucks carry the loads shown above, some personnel will be required to stand.

b. Truck capacities for animals.—

Horses or mules

Truck, $1\frac{1}{2}$ -ton (exceptional)	2 plus 2 men with equipment
Truck, $2\frac{1}{2}$ -ton, cargo	4 plus 4 men with equipment
Semi-trailer, $4\frac{1}{2}$ -ton	8 plus 8 men with equipment, harness and forage for 1 day.

207. FORM FOR TABULATING NUMBER OF TRUCKS REQUIRED FOR MOVEMENT BY MOTOR TRANSPORT (TACTICAL MOVEMENTS) INFANTRY DIVISION. —The following form may be used to tabulate the approximate number of trucks required to move the foot elements, with individual equipment, of the infantry division, or of component units thereof:

207. FORM FOR TABULATING NUMBER OF TRUCKS REQUIRED FOR MOVEMENT BY MOTOR TRANSPORT (Continued) :

1	2	3	4	5	6		7
					Number of trucks required		
Unit	T/O strength	Actual strength	Transported in organic motors	Strengths for which transportation must be furnished	1½-ton	2½-ton	
Rifle Co							
Rifle Plat							
Weapons Plat							
Hv Wpn Co							
Cal .30 MG Plat							
81-mm Mort Plat							
Inf Bn (w/Bn Sec Med Det, Atchd)							
Ilq & Hq Co, Inf Regt							
Serv Co							
AT Co							
Med Det, Inf Regt (less 3 Bn Secs)							
Inf Regt							
Inf Div (total) (foot troops) ¹							

¹ Remaining units of an infantry division are assumed to move by means of their own transport and so are not included in the above table.

■ **208. TRAFFIC FLOW OF MOTOR COLUMNS.**—For adaptation to a specific unit under field conditions, it is necessary that time and space studies be conducted continuously in order to arrive at a suitable factor based upon the state of proficiency of the specific unit in motor movement. This study may result in (1) a basic factor to which allowance for time distance between march units and serials must be added, or (2) a basic factor including allowance for time distance between march units and serials.

■ **209. DENSITY OF MOTOR COLUMNS.**—*a.* The density of a motor column is expressed as the average number of vehicles per mile. Motor columns may be classified as either (1) close column, (2) open column, or (3) in filtration.

b. Close Column.—In close column, vehicles are closed up to safe driving distances behind the preceding vehicle. Usually a fixed speedometer

209. DENSITY OF MOTOR COLUMNS (Continued) :

multiplier (SM)¹ is specified (such as 2, 2.35, 2.5, 3, etc.) to accomplish a safe-driving intervehicular distance at all speeds.

c. Open Column.—In open column, distances between vehicles are increased to accomplish greater dispersion. Usually a fixed density is specified (such as 10, 15, or 20 vehicles per mile) but open column conditions may be obtained by designating a fixed speedometer multiplier high enough to insure the desired intervehicular lead at the lowest speed expected.

d. Infiltration.—In infiltration, vehicles are dispatched at irregular intervals with a fixed density (such as 3, 4, 5, or 6 vehicles per mile).

e. The following table shows the density for several rates of march. Select the appropriate rate of march on the upper line and read directly below for density. (This table holds for a SM of 2.35 only).

Rate of March (Mph)	10	15	20	25	30	35	40	45	50
Density (Veh/Mi)	75	50	37	30	25	21	19	17	15

¹ Speedometer multiplier (SM) is any number by which speed in miles per hour is multiplied to determine inter-vehicular lead in yards. Example: with a SM of 2, the inter-vehicular lead of two successive vehicles (measured from head to head) at a speed of 10 mph is $2 \times 10 = 20$ yards; at a speed of 25 mph is $2 \times 25 = 50$ yds.

210. AVERAGE ROAD SPACE AND TIME LENGTHS OF MOTOR COLUMNS AT VARIOUS RATES OF MARCH.—*a. Road Space.*—Road space occupied by a motor column may be obtained by dividing the number of motor vehicles in the column (disregarding trailers) by the average density (number of vehicles per mile).

$$\frac{\text{Number of motor vehicles in column}}{\text{Density (vehicles per mile)}} = \text{Road Space (miles)}$$

The chart on page 15 shows the average road space under ideal conditions and does not include allowances for intervals between march units. Actual road space may vary somewhat depending upon conditions.

To use chart:

Determine the number of motor vehicles in column, disregarding trailers or towed weapons.

Locate the figure in vertical scale on left of chart, marked "number of vehicles."

Locate the figure showing average density under which the movement will be made, on the vertical scale marked "Density, Veh./mile."

Connect these two points with a straight edge. Read the figure at the point of intersection of the straight edge with the vertical scale marked "Road Space, Miles."

This will be the Road Space, in miles, occupied by the column under the given conditions.

210. AVERAGE ROAD SPACE AND TIME LENGTHS OF MOTOR COLUMNS AT VARIOUS RATES OF MARCH (Continued):

b. Time Length.—(1) The time length of motor columns may be obtained by multiplying number of vehicles in column by average intervehicular headway (interval of time between heads of vehicles as they pass a given point) of column. Thus a column composed of 300 vehicles having an average intervehicular headway of 0.20 minutes (12 seconds per vehicle) would have a time length of 300×0.20 or 60 minutes (300 vehicles per hour).

(2) *Close Column.*—For purposes of calculation a value of 0.08 minutes intervehicular headway may be used for vehicles moving in close column with a SM of 2.35. Thus a continuous column of 300 vehicles would have a time length of 300×0.08 or 24 minutes. (750 vehicles per hour). This volume (750 vehicles per hour) applies only to a given serial or column of vehicles and does not include time interval between march units. It can not be multiplied by number of hours to obtain a daily traffic volume. See Par 208.

(3) *Open Column and Infiltration.*—Time length of a motor movement in open column or infiltration may be obtained by the following formula:

$$\frac{\text{Number of motor vehicles in column}}{\text{Density (vehicles per mile)} \times \text{rate of march (mph)}} = \frac{\text{Time length (in hours). (Or length of time to pass a given point.)}}{\text{point.)}}$$

d. The chart on page 15 shows average time lengths under ideal conditions and does not include allowances for intervals between march units. Actual time lengths may vary somewhat depending upon conditions.

To use chart:

Obtain "Road Space" as directed in subparagraph "a",

Locate the figure representing the average rate of march in miles per hour on the vertical scale marked, "Rate of March, mi/hr."

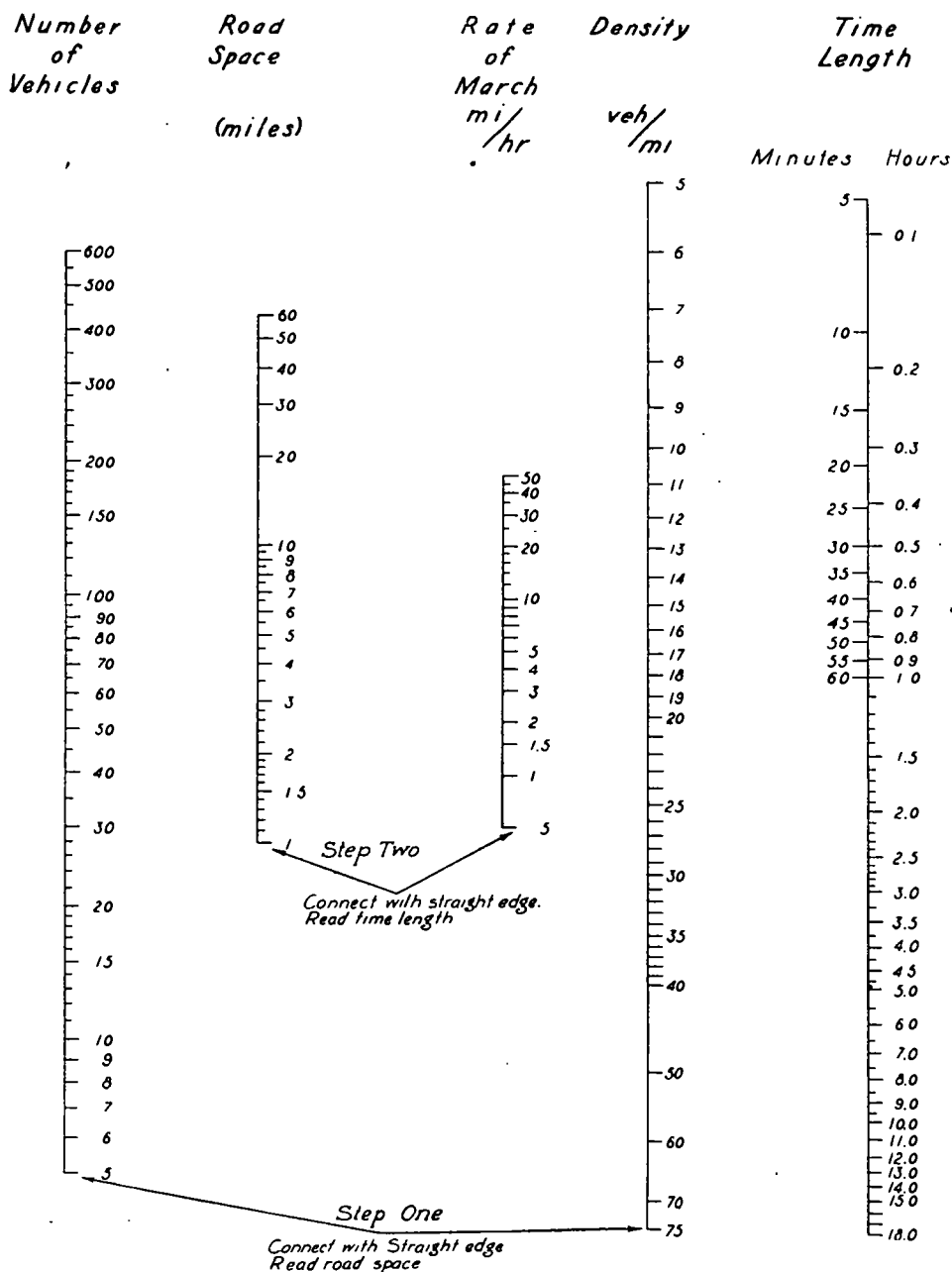
Connect these two points with a straight edge.

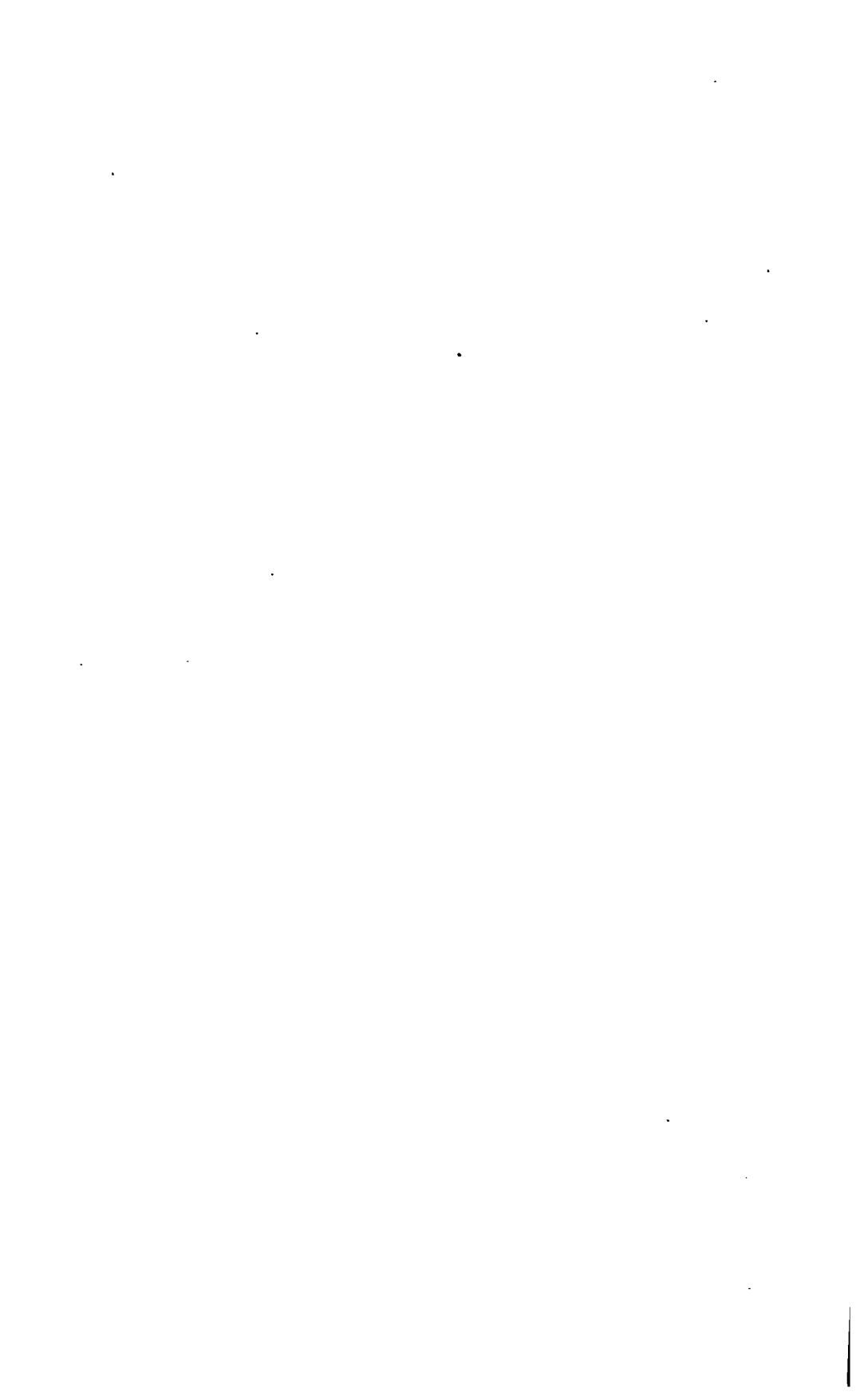
Read the figure at the intersection of the straight edge with the vertical scale marked "Time Length."

This figure is the Time Length of the column under the conditions given.

210. AVERAGE ROAD SPACE AND TIME LENGTHS OF MOTOR COLUMNS AT VARIOUS RATES OF MARCH (Continued):

(Does not include road space between march units.)





■ 211. MOTOR MOVEMENT BY ECHELON.—*a. Definition.*—Motor movement by echelon is a movement by a unit, such as an Infantry Division, which lacking sufficient organic transportation to move all personnel and equipment in one trip, uses a portion of its transportation to move its foot troops and essential supplies (by complete tactical units) in successive trips until the movement of all has been completed.

b. Time formula.—The following formula is useful for determining the total time of such a movement:

$$\text{Hours required} = \frac{\text{Number of trips} \times \text{distance in miles}}{\text{Rate of march in miles per hour}} + T$$

The "number of trips" is the number of trips in either direction; for example, in a two echelon movement three trips would be required—one forward trip to move foot troops, a return trip, and a third trip forward for the remainder of troops and organic loads.

"T" (a variable), represents the number of hours consumed in unloading and loading personnel and equipment, in turn-arounds at forward and rear assembly areas, and in closing the column into its area of destination. When two routes are available and the movement is made in close column in two echelons, a value of 3 may be assumed for "T," as giving a reasonable factor of safety. When more than two routes are available the value of "T" may be reduced.

Rate of march in miles per hour represents the average speed of the vehicles in the movement, over a period of time, including short halts.

■ 212. MARCH GRAPHS AND MARCH TABLES.—*a.* The field order for a march may be accompanied by a march table, particularly when the details of the march are not subject to change and can be foreseen.

b. A march graph is the simplest method of obtaining data required for a march table or order. It shows the approximate location at any hour of the head or tail of each serial, providing the march proceeds as scheduled. The vertical scale to the left, with point of origin at the bottom, serves as a distance scale in miles and should show the relative locations along the route of critical points where coordination of the movement is required. The horizontal scale provides a time scale in hours, beginning at the left with the earliest hour at which the first serial may start the march.

c. A serial is represented on the graph by a horizontal line, drawn to scale, equal to the time-length of the serial. This line is plotted opposite the point on the vertical scale, corresponding to the initial point of the serial; the left of the line being plotted above the hour, on the horizontal scale, at which the serial begins the march. From this left end a line is drawn upward at a slope representing the rate of march (at 10 miles per

212. MARCH GRAPHS AND MARCH TABLES (Continued) :

hour the slope equals 10 miles on the vertical to 1 hour on the horizontal scale). This sloping line represents the march of the head of the column. The intersection of this line with the horizontal line from any point along the route, if projected down to the time scale, will show the time the head arrives at such point. A line drawn from the right end of the horizontal line representing the time-length of the serial and parallel to the line representing the head of the column will represent the tail of the serial. Time of clearances may be obtained as explained for the head of the serial.

■ **213. EXAMPLES OF MARCH GRAPHS AND MARCH TABLES.—a.** The division commander has directed that the 1st Engr Bn; 1st QM Co, 1st Med Bn, and the 1st Infantry, in army reserve, move under cover of darkness from their present bivouacs, areas A and B to areas C and D, beginning at 1900 27 October 19__, under the following conditions:

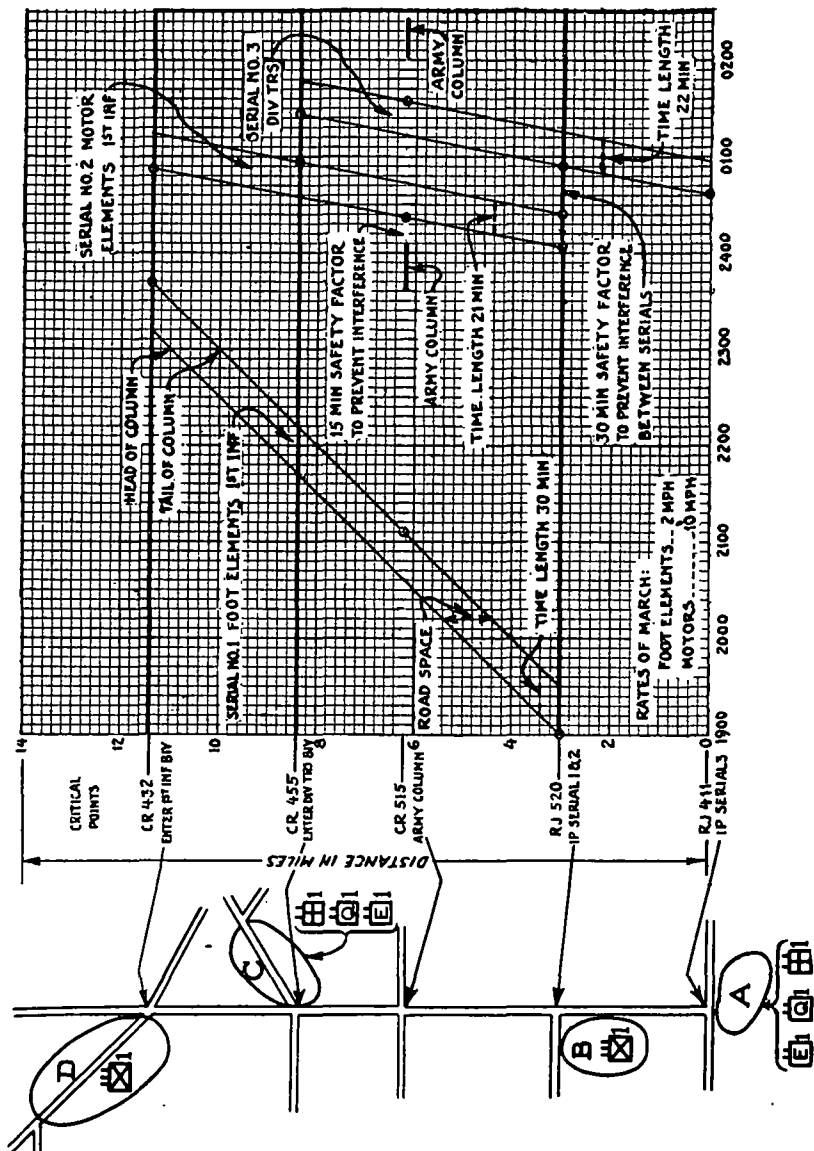
(1) Movement to be made without lights and to be completed prior to 0430 28 October 19__.

(2) Route A is available for the movement but CR 515 is reserved for army columns from 2336 to 0006 and from 0200 to 0224.

213. EXAMPLES OF MARCH GRAPHS AND MARCH TABLES (Continued):

b. The following EXAMPLE OF MARCH GRAPH-ROUTE A is the graph used by the division staff, 1st Infantry Division in planning the march.

(Figures do not represent any specific organization)



Time Lengths:

- (a) Serial 1—2,150 men on foot in column of threes at 2 mph (Chart Par 203)=20 min.
 - (b) Serial 2—262 vehicles at 10 mph (Chart Par 210)=21 min.
 - (c) Serial 3—269 vehicles at 10 mph (Chart Par 210)=22 min.
- o Indicates remarks in march table for control of movement.

ANNEX No. 1 to FO 2

Map—Operations Map

MARCH TABLE

1st Inf Div
Ketoku (1210-3365) San
1500, 27 Oct 19.....

1	2	3	4	5	6	7	8	9	10	11	12
Serial No.	Organization and commander	Present location	Route	Location by 0430 23 Oct	March			Control of Movement			Remarks
					Rate (miles per hour)	Type	Time- length (min- utes) 1	Location (critical points)	Earliest arrival time	Latest clearance time 2	
1	Col "A" 1st Inf Comdg: Foot Troops 1st Inf 2,150 men	Area B	A	Area D	2	Col- umn of 3's	30	RJ 520 (IP) CR 515 CR 455 CR 432	1900 2036 2142 2312	1930 2106 2212 2342	
2	Lt Col "B" 1st Inf Comdg: Motor elements 1st Inf 262 vehicles	Area B	A	Area D	10	Close col- umn	21	RJ 520 (IP) CR 515 CR 455 CR 432	0001 0021 0035 0057	0022 0042 0056 0114	
3	Lt Col "C" 1st Engr Bn Comdg: Div Trs: 1st Engr Bn, 1st QM Co, 1st Med Bn, 269 vehicles	Area A	A	Area C	10	Close col- umn	22	RJ 411 (IP) RJ 520 CR 515 CR 455	0034 0052 0112 0126	0056 0114 0134 0148	

OFFICIAL:

Y

G-3

Distribution: (Same as FO)

X
Maj Gen

1Does not include time between march units.

214. FORMS FOR ABRIDGED TABLE—ROAD-SPACES AND TIME-LENGTHS:
a. Infantry Division.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
	Units (including attached chaplains and medical personnel)	T/O No.	Actual strength		Road-space at halt (miles)		Road-space moving (miles)			Veh open Colm 10 Veh/Mi	Time-length moving (minutes)		Veh open Colm 25 mph	Additional Veh to carry foot Trs (Colm 7) 2½-ton	Road-space additional Veh at halt in close Colm	Time-length additional Veh in close Colm	When Div moves by truck			
			Men	Veh	Men on foot	Men on foot	Veh	Men on foot	Veh 10 mph Close Colm		Veh 25 mph Close Colm	Men on foot (Colm of 3s)					Veh in Close Colm	Road-space at halt (Colm 7+17) (miles)	Time-length in close Colm (Colm 14+18) (min)	
												2 mph					2½ mph			2½-ton
2																				
3																				
4																				
5																				
6																				
7																				
8																				
9																				
10																				
11																				
12																				
13																				
14																				
15																				
16																				
17																				
18																				
19																				
20																				

NOTE: Number of vehicles per mile based on SM 2.35.

Column 1: Designation of unit to be entered, as "1st Infantry Division."
Columns 3, 4, and 5: Based on periodic reports of subordinate units, the actual strength in men, and vehicles should be entered.
Column 6: Number of men on foot $\times .8$ (men in column of threes) = yards; $\div 1760$ = miles.
Column 7: For a column of vehicles of all types, 10 yards per vehicle is used as the average road space.
Column 8: Road-spaces of foot elements on the march are identical with road-spaces at the halt.
Column 9: Number of vehicles $\div$ Density (75 Veh/ml) = miles.

Column 10: Number of vehicles $\div$ Density (30 Veh/ml) = miles.
Column 11: Number of vehicles $\div 10$ = miles.
Columns 12 and 13: Number of men on foot $\times .0109 = 2\frac{1}{2}$ mph ($\times .0136$ at 2 mph).
Column 14: Number of vehicles $\times .08$ = minutes. (Does not include time between march units.)
Column 15: Number of vehicles $\times .24$ = minutes. (Does not include time between march units.)
Column 16: Men on foot (column 5) $\div 25$ (for $2\frac{1}{2}$ -ton trucks).

214. FORMS FOR ABRIDGED TABLE—ROAD SPACE AND TIME LENGTH (Continued) :

b. Armored Division:

	1	2	3	4	5	6	7	8	9	10	11	12
	Unit (including attached chaplain and medical personnel)	T/O No.	Author- ized strength		Actual strength		Road- space at halt (closed up) (mi)	Road-space moving (miles)		Open column 17 mph 20 veh per mi	Time-length moving (minutes)	
			Men	Ve- hi- cles	Men	Ve- hi- cles		Close column			Close column	Open column 17 mph 20 veh per mi
								10 mph	17 mph			
1												
2												
3												
4												
5												
6												
7												
8												
9												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												
21												
22												
23												
24												
25												
26												
27												
28												

NOTES

Based on an SM of 2.35

Column 1: Designation of unit to be entered, (such as "1st Armd Div").

Columns 5 and 6: Based on periodic reports by subordinate units.

Column 7: For column of vehicles of all types, 10 yards per vehicle is used as the average road-space.

Column 8: Number of vehicles ÷ Density (75 Veh/mi) = miles.

Column 9: Number of vehicles ÷ Density (44 Veh/mi) = miles.

Column 10: Number of vehicles ÷ 20 = miles.

Column 11: Number of vehicles × .08 minutes. (This does not include time-distance be-
march units.)

Column 12: $\frac{\text{Number of vehicles}}{20 \text{ (vpm)} \times 17 \text{ (mph)}} \times 60 = \text{minutes (or approximately } \frac{1}{6} \times \text{number of vehicles).}$

■ 215. MOTOR MOVEMENT BY ECHELON: INFANTRY DIVISION.—*a.* Refer to paragraph 211 for general formula for movement by echelon, and to paragraph 206, 207 and 216 for transportation requirements and availability.

b. The following example of standing operating procedure for a motor movement by echelon for an infantry division should be used only as a guide from which to prepare plans based upon the actual transportation available and the personnel to be moved:

c. Example No. 1:

(1) *Plan.*—Motor Movement 1 is a movement in which the division moves in its organic motors in two echelons, behind a screen furnished by troops outside the division, adequate to protect the movement against strong frontal attack. CT 1 and CT 2, constitute the first echelon. It moves on two or more routes and protects the immediate front of its movement with small advance guards. In addition to its organic transportation, sufficient additional trucks from units of the division not moving in the first echelon are attached to CT 1 and CT 2 for the movement, to transport by motor all their personnel and equipment. At the conclusion of the movement of the first echelon, trucks belonging to units of second echelon return to pick up prescribed loads and move CT 3. Necessary trucks from units of the first echelon dump loads in forward area and return to assist in moving foot troops of the second echelon. Division troops move in the second echelon.

(2) *Security.*—The Reconnaissance Troop protects the movement by conducting reconnaissance to the front and flanks.

(3) *Warning Order.*—Preliminary arrangements for the movement will be inaugurated upon receipt of order "Alert for motor movement one," or "Alert for motor movement one, after (designated hour)."

MOTOR MOVEMENT 1 (MM1)—1ST INFANTRY DIVISION.

FIRST ECHELON	
<i>Group 1</i>	<i>Group 2</i>
CT1:	CT2:
1st Inf	2d Inf
1st FA Bn	2d FA Bn
1st Plat Co A 1st Engr Bn	1st Plat Co B 1st Engr Bn
Co A 1st Med Bn (-)	Co B 1st Med Bn (-)
SECOND ECHELON	
<i>Group 3</i>	<i>Group 4</i>
CT3:	Div Trs:
3d Inf	① 1st Inf Div Arty (less 1st, 2d, 3d FA Bns)
3d FA Bn	1st Engr Bn (-)
1st Plat Co C 1st Engr Bn	1st Med Bn (-)
Co C 1st Med Bn (-)	1st QM Co (-)
	1st Ord Co
	1st Inf Div Hq & Hq Co
	1st Sig Co

NOTE: A Det of 1st Inf Div Arty Hq & Hq Btry normally marches with the Artillery of one of the groups of the 1st Echelon.

215. MOTOR MOVEMENT BY ECHELON; INFANTRY DIVISION (Continued) :
ASSIGNMENT OF MOTOR TRANSPORT FOR MOVEMENT OF FOOT TROOPS
(MM 1)

	1	2	3	4	5
	Unit from which transport is furnished	Number of 2½-ton trucks provided and unit to which furnished ²			
		1st Echelon		2d Echelon	Alternate 2d Echelon
		1st Infantry	2d Infantry	3d Infantry	3d Infantry
2	1st QM Co.....	48			31 ³
3	1st Engr Bn.....		30		
4	1st Med Bn.....				
5	1st Sig Co.....	6			
6	1st FA Bn.....			11	
7	2d FA Bn.....			11	
8	3d FA Bn.....		15		
9	4th FA Bn.....	21			
10	1st Inf.....			26	22
11	2d Inf.....			27	22
12	3d Inf.....		30		
13	TOTAL ¹	75	75	75	75

¹Total number of trucks required is based on:

Total foot troops in each infantry regiment—1,818 (an arbitrary figure not to be applied to any specific unit.)

Passenger capacity of trucks: 2½-ton — 25; 1½-ton — 15.

²See Par 216 for availability of trucks for troop movement.

³See Par 331 for prescribed loads of QM Co. Number of trucks used is based on number without prescribed loads (32).

NOTE

A variation in the above plan would be to use the trucks of the 1st QM Co to move foot troops in both the 1st and 2d echelons, and then have them return to pick up their prescribed loads (paragraph 331) and complete their movement in the 3d echelon. Their availability for troop movement in both echelons would be dependent upon the supply situation.

d. Example No. 2:

(1) Motor Movement 2 is a movement in which the division moves in its organic motors in two echelons. CTs 1, 2, and 3, less three Rifle Cos each, move in the first echelon. The three Rifle Cos from each CT and the remainder of the troops of the division move in the second echelon. Each CT dumps loads of trucks that can be temporarily diverted from their normal functions to assist in moving some of their own foot troops. Additional trucks to move the remaining foot troops of the 1st echelon are furnished by units moving in the second echelon. At the conclusion of the movement of the first echelon, trucks which carried foot troops return to pick up their prescribed loads. Necessary trucks from each CT that moved forward in the first echelon with their prescribed loads, dump

215. MOTOR MOVEMENT BY ECHELON; INFANTRY DIVISION (Continued):
 their loads in the forward area and return to assist in moving the three Rifle Cos of their respective CTs. Trucks of the QM Co which carry no prescribed loads (see Par 332) are also used to assist in moving the three remaining Rifle Cos of each CT.

(2) *Security*.—The Reconnaissance Troop protects the movement by conducting reconnaissance to the front and flanks.

(3) *Warning Order*.—Preliminary arrangements for this movement will be inaugurated upon receipt of order "Alert for motor movement two" or "Alert for motor movement two, after (*designated hour*)."

MOTOR MOVEMENT 2 (MM2)—1ST INFANTRY DIVISION.

FIRST ECHELON

CT 1:	CT 2:	CT 3:
1st Inf (less 3 R Cos)	2d Inf (less 3 R Cos)	3d Inf (less 3 R Cos)
1st FA Bn	2d FA Bn	3d FA Bn
1st Plat Co A 1st Engr Bn	1st Plat Co B 1st Engr Bn	1st Plat Co C 1st Engr Bn
Co A 1st Med Bn (-)	Co B 1st Med Bn (-)	Co C 1st Med Bn (-)

SECOND ECHELON

3 R Cos 1st Inf	3 R Cos 2d Inf	3 R Cos 3d Inf
-----------------	----------------	----------------

Div Trs:

1st Inf Div Arty (less 1st, 2d, 3d FA Bns); 1st Engr Bn (-);
 1st Med Bn (-); 1st QM Co (-); 1st Ord Co;
 1st Sig Co; 1st Inf Div Hq & Hq Co.

NOTE: A Det of 1st Inf Div Arty Hq & Hq Btry normally marches with the Artillery of one of the CTs of the 1st echelon.

ASSIGNMENT OF MOTOR TRANSPORT FOR MOVEMENT OF FOOT TROOPS (MM 2)

	1	2	3	4	5	6	7	8	9	10
		Number of $2\frac{1}{2}$ -ton trucks and unit to which furnished								
1	Unit from which transport is furnished	1st Echelon			2d Echelon			Alternate 2d Echelon		
		1st Inf	2d Inf	3d Inf	1st Inf (3 R Cos)	2d Inf (3 R Cos)	3d Inf (3 R Cos)	1st Inf (3 R Cos)	2d Inf (3 R Cos)	3d Inf (3 R Cos)
2	CTs:									
3	Inf Regts—each.....	20	20	20	6	6	6	6	6	6
4	FA Bns—each.....	6	6	6	4	4	4			
5	Div Trs:									
6	1st QM Co.....	16	16	16	10 ¹	10 ¹	10 ¹	14 ¹	14 ¹	14 ¹
7	4th FA Bn.....	11								
8	1st Engr Bn.....		11							
9	1st Med Bn.....									
10	1st Sig Co.....			11						
11	TOTAL ¹	53	53	53	20	20	20	20	20	20

¹Total number of trucks required is based on:

Total foot troops in each infantry regiment—1,818 (approximate); each rifle company 165.

(Figures are arbitrary—not to be applied to any specific unit.)

²See Par 332 for prescribed loads of QM Co. Number of QM Co trucks used is based on number without prescribed loads (32).

³Assuming all QM trucks are available except those carrying prescribed loads of Class III and V supplies (6).

■ 216. EXAMPLE OF WORK SHEET SHOWING AVAILABILITY OF CARGO TRUCKS (1½- & 2½-TON) IN THE INFANTRY DIVISION FOR MOVEMENT OF FOOT TROOPS.—This table shows a priority which might be established within a division; for the availability of organic motor transportation from units scheduled to be moved in the second echelon, to be used for movement of foot troops of the first echelon. The table can also be used in determining the priority of transport to be used in motorizing an infantry unit in reserve, or for cargo hauling.

WORK SHEET—AVAILABILITY OF MOTOR TRANSPORT FOR TROOP MOVEMENT^{1,2,3}

Priority	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
	Normal Use	3 Inf Regts (each)		3 FA Bns 105- mm How (each)	FA Bn 155-mm How	Engr Bn		Med Bn		QM Co	Sig Co		Total		Aggregate
		1½- ton	2½- ton	2½- ton	2½- ton	1½- ton	2½- ton	1½- ton	2½- ton	2½- ton	1½- ton	2½- ton	1½- ton	2½- ton	
1	Cargo Trks.....									48				48	48
2	Pers & Orgn Equip.....	1	2	1	1		1		6			1	3	18	21
3	Am & Pion tools.....	4											12		12
4	Ki Trks.....		19	5	5		4	2	3	1		1	2	86	88
5	Cannoner Trucks.....				3									3	3
6	Engr tools.....						36							36	36
7	Assault boats.....						1							1	1
8	W Sup.....						4							4	4
9	Am & AT mines.....	2	9	15	9		2						6	83	89
10	Comd & Opns.....	1		1	1					1	1	1	1	6	7
11	Med Sup.....								3					3	3
12	Sig Com.....		1	1							3	9	3	16	19
13	Atchd Med.....		1			1							1	3	4
14	Maint Sup.....						1							1	1
15	TOTAL.....	7	32	23	20	1	49	2	12	50	4	12	28	308	336

¹ The availability of cargo Trks & priority of such availability are command decisions.

² Prime movers omitted. See FM 100-5, Par 336.

³ Maintenance vehicles omitted as they usually accompany motor vehicles of the unit.

SECTION III

ADMINISTRATIVE TROOP MOVEMENTS BY RAIL

■ 217. CAPACITY RAILWAY EQUIPMENT.—*a. Passenger.*

(1) Consult AR 55-125 and AR 55-130 for assignment of coaches and sleeping cars to Administrative Troop Movements.

(2) Capacity of Standard U. S. Passenger Cars:

1	2	3	4
Item	Day coach ¹	Tourist sleeper	Standard sleeper ²
Length in feet.....	65 to 75	65 to 75	65 to 80
Number of sections.....	None	13 to 16	12 to 16
Maximum seating, 2 men to each double seat ³	60 to 70	52 to 64	53 to 64
Maximum seating, 3 men to each 2 double seats ³	45 to 48	39 to 48	40 to 43
Maximum sleeping, 2 men per berth.....	None	52 to 64	53 to 64
Sleeping capacity, 3 men per section.....	None	39 to 48	40 to 48
Sleeping capacity, 1 man per berth.....	None	26 to 32	27 to 32

¹ Limited number steel coaches, 70 feet long or over, available.

² Standard sleeper—12 sections and drawing room or 16 sections and no drawing room.

³ Double seat—a seat having the capacity of 2 men.

b. Freight.

(1) The Official Railway Equipment Register, published by the Railway Equipment and Publication Co., 424 West 33rd Street, New York, N. Y. shows by individual car initials and numbers, the marked capacity, length, dimensions, and cubical capacity of all American railway cars used to transport freight.

217. CAPACITY RAILWAY EQUIPMENT (Continued):

(2) *Standard U. S. Military Freight Cars:*

Type of Car	Gage	Capacity ¹		Weight Empty in Tons	Inside Dimensions		
	Ft-In	Tons	Cu Ft		Length Ft-In	Width Ft-In	Height Ft-In
Box.....	4-8½	20	.....	9	23-9½	7-7½	6-5
Box.....	3-3¾	20	.....	9	23-9½	7-7½	6-5
Box.....	3-3¾	30	.....	15	34-6	7-1	6-1
Box.....	3-6	30	.....	15	34-6	7-1	6-1
Box.....	4-8½	40	.....	20	39-9	8-0	6-9
H.S. Gondola.....	4-8½	20	.....	8	23-9½	7-6	4-0 side
H.S. Gondola.....	3-3¾	30	.....	10	34-6	6-11½	4-0 side
H.S. Gondola.....	4-8½	40	.....	21.5	39-8	7-11	5-0 side
L.S. Gondola.....	3-3¾	30	.....	9	34-6	6-11	1-6 side
L.S. Gondola.....	4-8½	40	.....	18	40-6½	7-6	1-6 side
Flat.....	4-8½	56	.....	17.5	40-9	8-5	.....
Flat.....	3-3¾	30	.....	16	34-8½	7-2	.....
9,900 Gal Tank.....	4-8½	40	.....	20	37-2	6-9 dia	.....
5,000 Gal Tank.....	3-3¾	30	.....	16	27-6	5-6 "	.....
Refrigerator.....	4-8½	35	.....	21	32-8	6-11	6-6

(3) *Standard U. S. Commercial Freight Cars:* ²

Box.....	.....	30	2,750	18	36	8-6	9
Box.....	.....	40	3,100	20	40-6	8-6	9
Box.....	.....	50	3,100	24	40-6	8-6	9
Gondola.....	.....	50	1,570	22	40	9-11	4
Gondola.....	.....	70	1,920	25	48	10	4
Flat.....	.....	40	.....	18	40	9	.....
Flat.....	.....	50	.....	20	45	9	.....
Flat.....	.....	70	.....	25	50	9	.....
8,000 Gal Tank.....	.....	40	.....	20	33	6-6 dia	.....
10,000 Gal Tank.....	.....	50	.....	24	33	7-2 "	.....
Refrigerator.....	.....	30	2,570	28	40-6	8-2	7-2
Refrigerator.....	.....	40	2,570	30	40-6	8-2	7-6
Stock.....	.....	30	2,625	20	36	8-6	8-6
Automobile.....	.....	40	3,100	20	40-6	8-6	9
Automobile.....	.....	50	3,850	25	50-6	8-6	9
Baggage.....	.....	.....	.....	45	60	9-1	8
Caboose.....	.....	.....	.....	20	27-6	8-2	7
Diner.....	.....	.....	.....	90	78-6	8-6	8-6

¹ Capacity for personnel may be computed on a basis of 8 square feet per man and equipment for those cars suitable for this purpose.

² There are no "standard" dimensions of commercial cars. Figures given here are for some types in common use.

■ 218. MAXIMUM BULK LOADING FOR STANDARD U. S. FREIGHT CARS: ¹

1	2	3	4
<i>Rated capacity of cars in tons.....</i>	30	40	50
<i>Items</i>	<i>Actual capacity of cars in tons</i>		
Ammunition.....	30	40	50
Barbed wire.....	30	40	50
Blankets, baled.....	27	32	40
Bread.....	19	24	30
Canned goods, boxes.....	30	36	45
Cement.....	30	40	50
Clothing, baled.....	27	32	40
Flour.....	30	40	50
Gravel.....	30	40	50
Harness and saddlery.....	18	20	30
Hay, baled.....	15	20	25
Iron, corrugated.....	30	40	50
Meat.....	15	24	35

1	2	3	4
<i>Rated capacity of cars in tons.....</i>	30	40	50
<i>Items</i>	<i>Actual capacity of cars in tons</i>		
Motor vehicle parts.....	24	28	40
Oats.....	18	24	30
Rails.....	30	40	50
Rifles, in chests.....	30	40	50
Sand.....	30	40	50
Sandbags.....	21	24	30
Stone, any form.....	30	40	50
Sugar.....	30	40	50
Telephone wire.....	30	40	50
Tentage.....	15	20	30
Ties, railroad.....	19	26	32
Tools, engineer.....	30	40	50
Tools, truck.....	30	40	50

¹ A rated capacity of a car in tons does not mean that this rated tonnage of all articles can be carried. This table shows the tonnage of military freight which can be carried in freight cars of common rated capacities.

■ 219. RAILWAY CAR SPACE REQUIREMENTS.—Refer to Par 601 for shipping lengths of military vehicles and equipment to be used in computing railway car requirements for Administrative Troop Movements.

■ 220. METHODS OF LOADING MILITARY VEHICLES AND EQUIPMENT.—In accordance with AR 55-145, par. 6, consult "Rules Governing the Loading of Mechanized and Motorized Equipment, Transported by the Ground Armed Forces, also, Major Caliber Guns for the United States Army and Navy on Open Top Equipment." (Revised, March 1, 1943)

■ 221. RAIL MOVEMENT TABLE—ADMINISTRATIVE:

INFANTRY DIVISION¹

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Line No.	T/O & E	Unit	Strength	Organizational Equipment	Checkable Baggage	Vehicles and Equipment per unit													Railway car requirements per unit											
						Standard Vehicles										Special Equipment			Passenger		Freight									
						Trailers			Trucks										Coach	Pullman	Box			Flat Cars						
						O & WO	EM	Pcs	Wt	Pcs	Wt	* 1/4-ton 66" W 109" L	1-ton 146"	* 1/4-ton 434 68" W 135" L	1/4-ton 434 Comd 166"	1/4-ton 434 Wpns Carr w/o 177"	1 1/4-ton 6x6 w/o 265"	2 1/4-ton LWB w/o 265"	2 1/4-ton LWB w/o 265"	2 1/4-ton SWB w/o 245"	Items	Ship Length Inches	48 Men	Std No of Secs (S/Sec)	Tow No of Secs (S/Sec)	Kt-Bag	Org Equip	Ck Bag	40'	48'	45'	50'
1	7-1	DHQ																												
2	7-2	Hq Co, Inf Div																												
3	7-3	Hq Sp Trs (Incl Atchd Band)																												
4	19-7	MP Plat																												
5	9-8	Ord L Maint Co																												
6	10-17	QM Co																												
7	11-7	Sig Co																												
8	7-12	Inf Regt, Hq & Hq Co *																												
9	7-13	Inf Regt, Sv Co																												
10	7-14	Inf Regt, Cn Co																												
11	7-19	Inf Regt, AT Co																												
12	7-16	Inf Bn, Hq & Hq Co																												
13	7-17	Inf R Co																												
14	7-18	Inf Hv Wpns Co																												
15	6-10-1	Div Arty Hq & Hq Btry *																												
16	6-26	L Arty Bn Hq & Hq Btry *																												
17	6-27	L Arty Btry (105-mm How)																												
18	6-29	L Arty Sv Btry (105-mm How)																												
19	6-36	M Arty Bn Hq & Hq Btry *																												
20	6-37	M Arty Btry (155-mm How)																												
21	6-39	M Arty Sv Btry (155-mm How)																												
22	2-27	Cav Ren Tr Mecs																												
23	5-16	Engr Hq, Hq & Sv Co *																												
24	5-17	Engr Co																												
25	8-16	Med Bn Hq & Hq Det																												
26	8-17	Med Coll Co																												
27	8-18	Med Clr Co																												

¹ Can be adapted to any type division.² Compute flat car requirements (in Continental U. S.) on basis of crosswise loading of 1/4-ton trucks and trailers. It should be noted that the Assn of American Railroads has authorized shipment on flat cars 10 feet wide of eight 1/4-ton trucks lengthwise in two parallel columns of four each.

Before loading crosswise check clearance with RR officials over entire route.

³ Personnel and equipment loaded with Hq Sp Trs 7-3, line 3.⁴ Includes attached medical and chaplains.

221. RAIL MOVEMENT TABLE—ADMINISTRATIVE (Continued):

NOTES:

a. This tentative table should be maintained currently by division transportation officers in compliance with AR 55-130, Par 12.

b. Upon receipt of movement order, the table will be revised to reflect actual strength and equipment on hand, and to conform to provisions of movement order.

c. Organizational equipment and checkable baggage must be listed separately. Organizational equipment moves under freight rates and will normally be loaded in unit transportation. If loaded separately, additional box cars will be required. (Colm 25 above.)

d. Checkable baggage up to 150 pounds per individual is carried free. Normally this will be loaded in baggage or box car. When transportation groupings permit, checkable baggage for two companies or similar units may be loaded in one box car. (Colm 26.)

e. Officers and warrant officers will be moved in standard pullmans, two per section. They should be listed in column 22 in number of sections (example: 14 officers, show as 7 sections) as officers and warrant officers of all units in one train will be grouped in one or more pullman cars as required. (AR 55-125.)

f. Enlisted men will be moved in tourist pullmans, three per section. Noncommissioned officers of the first three grades are entitled to a separate berth. (AR 55-125.) Allowances should be made for personnel attached from Medical Battalions and personnel detached for guards on freight cars.

g. Kitchen-baggage cars are furnished on the basis of one per 250 men or fraction thereof. (AR 55-135.) Kitchen-baggage car requirements per train are dependent upon transportation groupings. For tentative estimates allow one per unit.

h. Compute flat cars required on basis of maximum utilization of each car, regardless of length. See Par 222. Do not restrict computation to cars of all one length. Twelve inches at one end of each car must be left for rake-wheel clearance. For detailed approved methods of loading vehicles and equipment, see Association of American Railroads booklet "Rules governing the loading of mechanized and motorized army equipment, also, major caliber guns for the United States Army and Navy, on open top equipment." (See Par 220.)

■ 223. TRAIN CONSIST TABLE—ADMINISTRATIVE:

-----DIVISION

Train No.	Transportation groupings	Railway equipment							Train officers
		Coach	Pullman		Kitchen- baggage	Box	Flat and gondola	Total	
			Standard	Tourist					
1									CO..... TO..... Mess O..... Surg.....
2									CO..... TO..... Mess O..... Surg.....
3									CO.....

NOTES

1. Upon receipt of movement order, Commanding General will designate the order in which units will be forwarded.
2. Train Consist Table is prepared by division transportation officer from data appearing on revised Rail Movement Table, (Par 221).
3. Maximum and minimum length of trains (total number of freight and passenger cars) will be prescribed by the origin railroad. (AR 55-145, Par 1.)
4. Under "Transportation Groupings" show units which will comprise each individual train.
5. Under "Train Officers" show by name the officers assigned to each train in accordance with AR 55-145, Pars 14, 15, and 16.

■ 224. INDIVIDUAL TRAIN LOADING PLAN—ADMINISTRATIVE:

-----DIVISION

TRAIN No.....

MAIN No.....

ASSIGNMENT OF PERSONNEL AND EQUIPMENT
TO INDIVIDUAL RAILWAY CARS

Front

1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31	32	33	34	35
36	37	38	39	40	41	42
43	44	45	46	47	48	49
50	51	52	53	54	55	56

Rear

(Continued on following page)

224. INDIVIDUAL TRAIN LOADING PLAN—ADMINISTRATIVE (Continued) :

SUGGESTED SYMBOLS FOR EQUIPMENT AND VEHICLES

<i>Equipment</i>	<i>Sym- bol</i>	<i>Equipment</i>	<i>Sym- bol</i>	<i>Equipment</i>	<i>Sym- bol</i>	<i>Equipment</i>	<i>Sym- bol</i>
Coach.....	CH	Truck, ¼-ton.....	TJ	Howitzer, 105-mm.....	HL		
Fullman, Std.....	SP	Trailer, ¼-ton.....	TQ	Howitzer, 155-mm.....	HM		
Fullman, Tourist..	TP	Truck, 2½-ton.....	TC				
Kitchen-Baggage..	KB	Motorcycle.....	MC				
Box.....	BX	Gun, 37-mm, AT	GAT				

ASSIGNMENT OF UNITS TO CARS (BY BLOCK NUMBERS ABOVE)

<i>Unit</i>	<i>Block Nos.</i>	<i>Unit</i>	<i>Block Nos.</i>	<i>Unit</i>	<i>Block Nos.</i>

NOTES

- This Plan is prepared by the division transportation officer. Copies should be furnished to:
 - Troop commanders.
 - Entraining officers.
 - Train commanders.
 - Motor park dispatcher so that vehicles will arrive at entraining point in the order in which they will be loaded on railway cars.
 - Local transportation officer.
- In each block, indicate by symbol the specific personnel and equipment assigned to each car.
- In each block representing an open-top freight car (flat car or gondola car) indicate by symbol the equipment specifically assigned to each car.
- In the space provided at the bottom of the Plan, all cars (freight and passenger) should be assigned by block numbers (not by railroad car initials and numbers) to the specific units which will occupy them.

SECTION IV

TROOP MOVEMENTS BY RAIL IN A THEATER OF OPERATIONS

226. TROOP MOVEMENT BY RAIL (T of Opns) ; BASIC DATA.—*a. Speed of railway trains.*—The average speed of military railway trains is approximately 20 miles per hour.

b. Time of loading and unloading.—Allow 3 hours for loading or unloading standard type troop trains and other trains carrying artillery, motorized units, and cavalry units. When only foot elements of a unit move by rail and other elements of the unit move overland, allow one-half hour for loading and one-half hour for unloading.

c. Train densities.—Train densities on single and multiple track railroads will vary greatly depending on the condition of track, number of passing sidings, terminal facilities, available rolling stock, and the like. At the average speed of 20 miles per hour, maximum train densities may be estimated as follows:

One track with two-way traffic	-- 20 trains per 24 hours in each direction
One track with one-way traffic	----- 60 trains per 24 hours
Two tracks with two-way traffic	--- 60 trains per 24 hours in each direction
Two tracks with one-way traffic	----- 120 trains per 24 hours
Three tracks with two-way traffic	-- 80 trains per 24 hours in each direction
Three tracks with one-way traffic	----- 180 trains per 24 hours
Four tracks with two-way traffic	-- 120 trains per 24 hours in each direction
Four tracks with one-way traffic	----- 240 trains per 24 hours

d. Railroad officials should be consulted for accurate information as to train densities and speeds of trains possible for a rail movement.

■ 227. TYPES AND COMPOSITION OF RAILWAY TRAINS (T of Opns).—*a.* Composition of railway trains, grouped for planning purposes, used for troop movements in the combat zone is as follows:

1	2	3	4	5	6	7	8
Type of Train	Composition ¹						Total Number of Cars
	Pullman	Coach	Box ² ⁵	Flat	Stock	Caboose ³	
A.....	1	11	4	18	.....	(1)	34
B.....	1	6	4	23	.....	(1)	34
C.....	6	22	6	.....	.....	(1)	34
D ⁴	1	5	2	26	.....	(1)	34
E.....	1	5	3	.....	25	(1)	34
F.....	1	10	7	.....	16	(1)	34

¹ The above table contemplates the use of standard railroad equipment. Standard train: of specially constructed light equipment may also be prescribed in the theater of operations.

² Includes one combination kitchen-supply car per company.

³ For train crew, not required when coaches are used.

⁴ For movement of armored units when wheel vehicles and certain personnel, march separately. Personnel with this type train includes 2 men per vehicle.

⁵ Baggage cars may be used.

■ 228. EXAMPLE OF RAIL CONSTRUCTION REQUIREMENTS.—*a. Problem*
—To construct a 150 mile railway with 5.25 miles of siding and a yard at each terminal of 3.25 miles of track.

(1) Material requirements:

Rail	25,000 tons
Cross ties	50,000 tons
Rail fastenings	1,500 tons
Ballast, stone	315,000 tons
Bridges, girder (30 @ 80 tons each)	2,400 tons
TOTAL	393,900

(2) Personnel Requirements;

For Construction:	O & WO	EM
2 Engr Gen Sv Regts (T/O & E 5-21)	108	2,424
For operation:		
2 Ry Operating Bns (T/O & E 55-225)	54	1,578
TOTAL	162	4,002

(3) Rolling Stock Requirements:

30 locomotives @ 100 tons each	3,000
250 cars (60,000 lbs capacity)	5,000
TOTAL	8,000

(4) GRAND TOTAL: 401,900 tons; 162 Officers; 4,002 EM.

SECTION V

MOVEMENTS BY AIR TRANSPORT

■ 229. INTRODUCTION.—This section deals with the movement of ground troops by air.

■ 230. DEFINITION.—*a. Airborne forces.*—Army Ground forces units which are specially organized, trained, and equipped to utilize air transportation for entry into combat. Normally such units will include parachute and glider borne elements. Airborne units should not be confused with other light units of the Army Ground Forces, many of which may be transported by air, which are not specifically organized, trained, nor equipped for this method of movement.

b. Air Force.—See Chapter 1, Section IV.

c. Troop Carrier Wing, Group, Squadron.—These are combat units organized, equipped and trained for tactical employment as combat carriers in active operations. Their primary mission is to carry combat troops and auxiliary combat equipment to effective locations in combat zones from which to begin active combat operations. Their secondary mission is to maintain combat supply and resupply to units in the combat zone and to evacuate casualties and other personnel and material.

■ 231. OUTLINE OF PROCEDURE.—Movement of troops by air transport is normally ordered by the highest authority in the Theater. These orders are issued simultaneously to the commander of the unit to be moved and to the commander of the Air Forces in the Theater.

Responsibility.—The Air Force is responsible for the entire operation to include arrival at the proper destination, protection in flight and supply after landing until other means of supply become available. This normally means that supplies must be transported by air and delivered by air landing, if airdromes or strips are immediately available. If airdromes or strips are not available deliveries may be made by glider, parachute, or free dropping. Bomber type aircraft, if available, is best for parachute resupply.

The Air Force is responsible for assisting airborne troops after their landing in enemy territory by the use of combat aviation to isolate the landing areas.

The unit to be transported is responsible for the selection of the landing areas from which it can most successfully accomplish its assigned mission. The transporting unit then must make the decision as to whether or not the selected landing areas can be reached.

The unit to be transported is responsible for getting the troops and material to be transported in the main flight to the departure fields to be

231. OUTLINE OF PROCEDURE (Continued) :

used. Thereafter the receiving and delivery of supplies is the responsibility of the transporting unit.

Reference.—For details of planning: SOP developed by Troop Carrier Command and Airborne Center; WDTC No. 113, 9 Oct 1943; Pamphlet "Employment of Airborne Troop Carrier Forces."

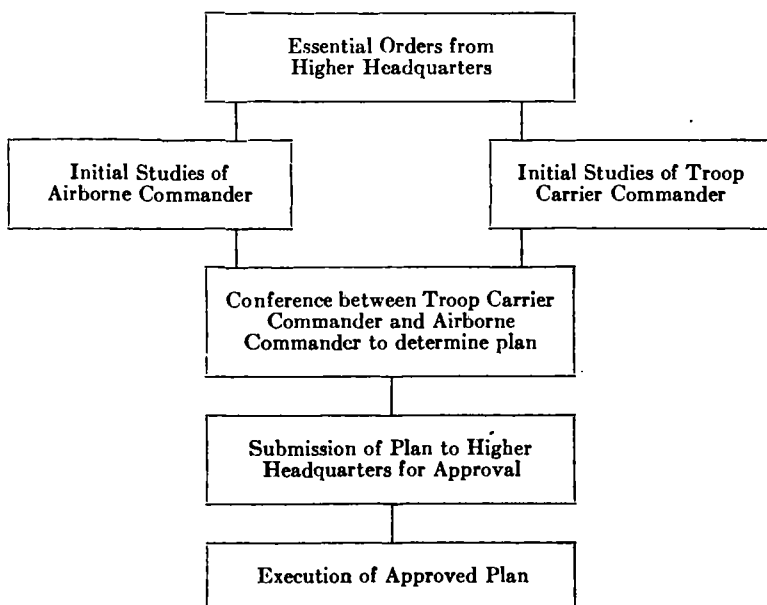
■ **232. COORDINATION.**—The closest coordination and cooperation between the commanders and staffs of the unit to be moved and the transporting unit must exist.

The transporting unit should furnish all data as to capacity of airplanes, location of airplanes on departure fields, time of departure, time of loading and time of arrival.

The unit to be transported should furnish all data as to requirements to accomplish their mission, number of troops and amount of materiel to be transported and time they must arrive at the destination to accomplish the assigned mission.

Coordination of airborne troops and combat aviation upon arrival at the destination is imperative as the airborne troops require time to assemble for combat and normally will be short of artillery ammunition.

■ **233. SCHEMATIC DIAGRAM: PLANNING PHASES OF AN AIRBORNE OPERATION :**



AIR MOVEMENT TABLE

D Day_____

Hour, Date..... Hour, Date.....

[illegible]

■ 235. WEIGHTS OF PERSONNEL AND EQUIPMENT.—*a. Weight of personnel and component units of an Infantry Division.*

<i>Item</i>	<i>Pounds per item</i>	<i>Remarks</i>
(1) Individuals.—(Average O and EM)		
Man stripped -----160 lb		For loading purposes, average weight of officer and enlisted man, fully equipped for combat, is computed as 240 lbs per individual (with parachute).
Parachute ----- 20 lb		
Rations ----- 6 lb		
Clothing (winter) ----- 18 lb		
Equipment ----- 21 lb		
Arms and ammunition --- 15 lb		
TOTAL -----240 lb	240	The weights given should be used only as a guide. The total weight of each unit will depend upon the number of men transported by air, the equipment carried for each unit, and the amount of ammunition and rations transported with the troops. The weights given provide for the following ammunition, 60 rounds per carbine; 176 rounds per rifleman; 320 rounds per automatic rifle; 5000 rounds per .30 Cal MGs; 1000 rounds per .50 Cal MG; 54 rounds per 60-mm mortar; 75 rounds per 81-mm mortar; and 20 rounds per 37-mm AT Gun, 10 rounds per launcher rifle Cal .30; 10 rounds per rocket launcher 2.36" AT.
(2) <i>Weights of component units:</i>		
(a) <i>Infantry Rifle Company</i>	46,500	
Rifle Squad	2,880	
Rifle Platoon	11,040	
Lt MG Squad	1,620	
Lt MG Section	3,960	
60-mm Mortar Squad	1,543	
60-mm Mortar Section	5,589	
Weapons Platoon	11,229	
(b) <i>Infantry Heavy Weapons Company</i>	49,982	
.30 Cal MG Squad	2,404	
.30 Cal MG Section	5,048	
.30 Cal MG Platoon	12,496	
81-mm Mortar Squad	2,845	
81-mm Mortar Section	5,930	
81-mm Mortar Platoon	20,190	
(c) <i>Infantry Battalion Units</i>		
Bn Hq & Hq Co	24,528	
Med Sec	8,400	
Rifle Co		
3 Rifle Cos	139,529	
Hv Wp Co	49,982	
Total Inf Bn	222,437	
(d) <i>Infantry Antitank Co. (37-mm)</i>	51,384	
Squad	2,602	
Section	5,684	
Platoon	12,808	
(e) <i>Infantry Regt's Hq and Hq Co</i>	28,560	

235. WEIGHTS OF PERSONNEL AND EQUIPMENT (Continued) :

<i>Item</i>	<i>Pounds per item</i>	<i>Remarks</i>
(f) Field Artillery Battalion Units		Following equipment not included: barrack bags, officers bedding rolls, field desks, cooking outfits, wall tents, and non-portable typewriters. Includes reasonable quantities of engineer equipment and supplies. Includes 2 SCR 177 sets. See FM 7-20.
FA Btry (75-mm How pack)	41,674	
Bn Hq FA Bn (75-mm How pack)	24,012	
FA Bn (75-mm How pack) (3 Btrys and Bn Hq)	149,034	
(g) Engineers		
Engineer Squad	3,279	Includes reasonable quantities of engineer equipment and supplies.
Engineer Platoon	10,610	
Engineer Company	33,796	
(h) Detachment—Div Sig Co	3,480	Includes 2 SCR 177 sets. See FM 7-20.
(i) Parachute troops		
Rifle Platoons:		
Each airplane should be capable of transporting, in addition to airplane crew:		
12 parachutists and 3 equipment delivery containers (each 300 lbs net cargo capacity).		
Co Hqs		
One airplane required for each rifle company headquarters.		
Bn Hqs		
Two airplanes required for each Bn Hq and Hq Co.		

b. *Weights of essential items of equipment and supplies.*

<i>Item</i>	<i>Pounds per item</i>	<i>Remarks</i>
Rations and water		
Reserve ration, (C-ration) (Par 312)	4.20	One meal 1.75 lbs.
Can, water, 10-gal (with water)	100.00	
Ordnance equipment and ammunition		
Cartridge, Very, assorted	.20	
Chest, cal .30 MG Am (250 rounds)	20.30	
Chest, cal .30 LMG Am (250 rounds)	20.30	
Chest, cal .50 MG Am (100 rounds)	36.00	
Chest, spare parts, MG cal .30	17.30	
Chest, spare parts, LMG	18.93	
Chest, spare parts, .50 cal MG	31.50	
Gun, submachine, cal .45	10.00	
Gun, 37-mm, Antitank	912.00	
Howitzer and carriage, pack, 75-mm M1	1,269.00	
Tube -----	221.00	

235. WEIGHTS OF PERSONNEL AND EQUIPMENT (Continued) :

<i>Item</i>	<i>Pounds per item</i>	<i>Remarks</i>
Breech mechanism -----	121.00	
Top sleigh -----	121.00	
Bottom sleigh and recoil -----	203.00	
Cradle -----	100.00	
Front trail -----	235.50	
Rear trail -----	95.00	
Axle and traversing mechanism -----	65.50	
Wheels -----	96.50	
Telescope and mount -----	10.50	
Machine gun, cal .30, light complete	48.00	
Machine gun, Browning, cal .30, complete	91.95	
Machine gun, Browning, cal .50, complete	124.00	
Magazine, submachine gun (50-rd) filled	4.95	
Mortar, 60-mm, complete	43.00	
Mortar, 81-mm, complete	136.00	
Projector, ground signal	4.20	
Rifle, automatic, cal .30 (BAR), M1918A2, complete	23.50	
Rifle, automatic, cal .30, M-1	9.4	
Round, 37-mm antitank gun Am, AP	3.41	
Round, 37-mm antitank gun AM, HE	3.03	
Round, 60-mm mortar Am	2.96	
Round, 81-mm mortar Am (L)	6.92	
Signals, ground, assorted	.50	
Truck, ¼-ton, w/spare tire, 10 gals gas and tools	2,366.00	
Trailer 1-ton	Net	
	1,470.00	
	Gross	
	3,470.00	
<i>Quartermaster equipment</i>		
Axe, handled	6.00	
Bag, water sterilizing	18.8	
Kitchen, M-37 (3 unit)	1,229.00	
Pick, handled	10.00	
Shovel, general purpose	4.50	
<i>Medical equipment</i>		
Bucket, canvas	3.3	
Chest, MD (99280)	121.00	
Chest, MD (99281)	150.00	
Chest, MD (99282)	161.00	
Litter	15.00	
Set, splint	50.00	
Set, blanket	138.00	
Set, lantern	30.00	
<i>Signal equipment</i>		
Axle, RL 27-A	6.50	
Batteries for radio set SCR-195	12.00	
Chest, BC-5	45.00	Spare
Codes (special for the operation)	.25	
Devices, code	.50	
Lineman equipment	25.00	
Panel set	23.00	
Radio, SCR-195	27.00	
Radio, SCR-178	203.00	
Telephone, EE-8	13.00	
Wire, field telephone, 1-mile	132.00	

■ 236. SUPPLY FACTORS.—Factors, other than tactical, influencing supply by air transport consist of:

a. Supply conditions:

(1) Weight will ordinarily be the controlling factor for supplies. Dimensions will be determined by the size of door.

(2) The number of trained personnel available for loading and lashing supplies. (6 trained men can load a C-47 type airplane in 45 minutes. Also note T/O & E Air Cargo Resupply organization.)

b. Supply methods:

(1) *Air Ferry*.—Delivery by airplane to the airhead. This is the most efficient method, but requires an air base or strip at the unloading point to allow the airplane to land.

Carrying capacity of airplanes:

<i>Type Plane</i>	<i>Normal Pay Load at</i>	<i>Radius</i>	<i>Range</i>
C-46 -----	10,000 lbs. -----	600 miles -----	1,200 miles
C-47 -----	5,000 lbs. -----	550 miles -----	1,100 miles
C-54 -----	14,000 lbs. -----	775 miles -----	1,550 miles
C-87 -----	9,800 lbs. -----	770 miles -----	1,540 miles

NOTE: Pay load will vary with length of flight and speed of Acft.

(2) *Glider*.—Delivery by gliders is expensive, but can be accomplished without the use of a prepared air strip. The CG-4A has a capacity of 3,600 lbs. and the CG-13A a capacity of 8,000 lbs. (excluding weight of pilot).

(3) *Parachute*.—Delivery by parachute from a plane by releasing parachute-equipped bundles over the desired dropping area is comparatively inefficient and should be used only when more desirable methods are not available.

The C-47 type aircraft, which is normally used for airborne operations, can successfully carry and drop 10 parapacks simultaneously. 6 of these parapacks mounted in pararacks under the aircraft are released by the pilot and 4 parapacks are pushed out of the door.

236. SUPPLY FACTORS (Continued) :

WEIGHTS & CAPACITIES, PARACHUTE DELIVERY UNITS

<i>Type of Unit</i>	<i>Weight of Unit</i>	<i>Average Safe Load of Unit</i>	<i>Gross Weight (lbs)</i>
Canopy Parachute, Cargo 24'.....	20.00 ¹	200	220.00
Delivery Unit, Type A-4.....	13.25	100	133.25
Delivery Unit, Type A-5.....	42.00	175	237.00
Delivery Unit, Type A-6.....	15.00	150	185.00
Delivery Unit, Type A-7.....	.50	150	170.50
Delivery Unit, Type A-8.....	59.00	125	204.00
Cargo Net.....	11.00	189	220.00

¹ The weight of canopy is added to Gross Weight for each unit.

(4) *Free Dropping.*—Dropping of supplies without parachute results in a high loss of the supplies and should be undertaken only in case of emergency, using the least fragile items.

SECTION VI

WATER MOVEMENT¹

■ 237. SHIPPING TERMS.—Ships which the Army uses to transport troops are known as *troop transports*; those used to transport supplies are known as *freight transports* or *freighters*. Similar ships used by the Navy are called APs and AKs respectively. Characteristics peculiar to or associated with ships include the following:

a. *Nautical Mile*—6,080 feet.

b. *Knot*.—One nautical mile per hour.

c. *Gross Tonnage*.—The entire internal capacity of a ship expressed in tons of 100 cubic feet.

d. *Net Tonnage*.—The tonnage of a ship representing the freight earning spaces remaining after certain deductions have been made from the gross tonnage for the propelling machinery space, shaft trunks, crew spaces, and navigation spaces. Net tonnage is also expressed in tons of 100 cubic feet.

e. *Deadweight Tonnage*.—The carrying capacity of a ship expressed in tons of 2,240 pounds capacity (i.e., the difference between displacement loaded and displacement light).

f. *Displacement Tonnage, Light and Loaded*.—Displacement light is the weight of the ship, *EXCLUDING* cargo, passengers, fuel, water, stores, dunnage, and such other items as are necessary during a voyage. Displacement loaded is the weight of the ship *INCLUDING* those items.

g. *Cargo Capacity Tonnage*.—The number of tons (2,240 pounds) available for cargo, which remain after deducting the weight of fuel, water, stores, dunnage and such other items as may be necessary for a voyage from the Deadweight Tonnage.

h. *Bale Cubic Capacity*.—The space available for cargo, measured in cubic feet to the *INSIDE* of the cargo battens², *ON* the frames, and to the *UNDERSIDE* of the beams.

i. *Ship Ton or Measurement Ton (M/T)*.—40 cubic feet.

j. *Stowage Factor*.—The volume of a particular item or piece of cargo in cubic feet per ton, either per long ton or per short ton, as specified. While stowage factors of cargo were originally stated in cubic feet per long ton, commercial practice today states stowage factors either way. This makes it necessary to indicate a stowage factor of cargo as cubic feet per long ton or cubic feet per short ton.

¹ For a comprehensive treatment of this subject, see TM 55-310, "Stevedoring."

² Batten—Pieces of wood secured to frames of ships in holds and 'tween decks to keep cargo from touching metal, thus preventing damage.

237. SHIPPING TERMS (Continued) :

k. Vessel Factor:

$$\text{Vessel Factor} = \frac{\text{bale cubic capacity} - \text{estimated stowage loss}}{\text{cargo capacity tons} - \text{estimated weight of deck cargo}}$$

Example: A ship has a bale cubic capacity of 500,000 cubic feet and a cargo capacity tonnage of 10,300 long tons. Its deck load for the particular voyage is estimated at 300 long tons and the stowage loss at 15%. What is its Vessel Factor?

$$\begin{array}{r} 500,000 \text{ cu ft} - 75,000 \text{ cu ft } (.15 \times 500,000 \text{ cu ft}) \\ \hline 10,300 \text{ long tons} - 300 \text{ long tons} \\ \hline 10,000 \text{ long tons} \\ \hline = \frac{10,000 \text{ long tons}}{425,000 \text{ cu ft}} = 42.5 \text{ cu ft/long tons} \end{array}$$

This means that the ship will be fully loaded, that is, have all of its space for cargo filled (less stowage loss) and at the same time have all the cargo weight it can carry, if it is loaded with cargo that occupies 42.5 cubic feet to the long ton. The Vessel Factor is expressed in cubic feet per *long* ton.

■ 238. **LOADING.**—*a. General.*—In loading transports, a balance must be maintained between the weight the ship can safely float and the volume it can hold; or, in other words, the weighted average of the stowage factors of the various pieces of cargo stowed under the decks must approximate the vessel factor of the particular transport.

Unless limited by the method of loading being used, it is desirable for a ship to be fully loaded. There are two separate measurements to determine whether a ship is fully loaded, a weight measurement and a volume measurement.

A ship is said to be "full" when its bale cubic capacity (underdeck space for cargo) is completely utilized, except a reasonable allowance (10% to 20%) for stowage loss.

A ship is said to be "down" when it has its cargo capacity tonnage aboard.

b. Methods of Transport Loading:

(1) *Commercial*—This method of loading utilizes the ship's space to maximum capacity. It applies to movements between established and well secured ports, when no naval opposition is to be expected and it is unnecessary for troops and impedimenta to be immediately available for tactical employment upon landing.

238. LOADING (Continued) :

(2) *Unit*:

(a) **COMBAT**—By this method, certain units with their necessary impedimenta and transportation are completely loaded in a single transport to facilitate their making a forced landing or to be immediately available for tactical employment upon debarking. They must be loaded to facilitate simultaneous debarking of troops, impedimenta, and supplies into small boats or on piers; to maintain the tactical integrity of the units at all times; and in the inverse order in which it is desired that they be debarked.

(b) **ORGANIZATIONAL**—This is a method of loading in which organizations with their impedimenta and transportation are loaded in a single transport, but not in such a manner as to permit debarkation of troops, impedimenta, and supplies simultaneously. This method is more economical in ship space than combat unit loading. It maintains tactical integrity and permits tactical employment of organizations as soon as troops and equipment are unloaded, but does not permit utilization of the organizations for forced landings.

(c) **CONVOY**—This is a method of loading organizations with their impedimenta and transportation in transports of the same convoy, but not necessarily the same ship. It is used after beachheads are established and when it is unnecessary to utilize the organizations for tactical employment until some time after they are debarked and assembled.

■ 239. **PORTS**.—A port is a harbor plus terminal facilities, including wharfs, piers, quays, slips, and docks. The capability of a port to serve a force is not a fixed quantity. At any given time, it may be estimated by applying two dominant factors: Port facilities, and Port commitments.

a. Port facilities (assuming adequate water depth) to be considered include the following:

- | | |
|---|--|
| (1) Number of berths | (7) Piers and loading equipment |
| (2) Number of working berths | (8) Clearances to piers (road or rail) |
| (3) Number of moorings | (9) Storage (covered and open) |
| (4) Sheltered and dispersed anchorages | (10) Fresh water |
| (5) Available service troops and native labor | (11) Bunkering facilities |
| (6) Staging areas for troops | (12) Lighters and Tugs available |
| | (13) Hospitals |
| | (14) Local communications |

b. Port commitment means the administrative mission that is a responsibility of the port, such as:

- (1) Maintenance of troops overseas
- (2) Maintenance of major units in training or staging areas
- (3) Percentage of available anchorage allocated to Navy
- (4) Civilian tonnage demand that must be cleared

■ 240. SAILING DISTANCES: (Shown in nautical miles over established great circle routes).

	Ports	Ports of Embarkation							
		Boston	New York	Charleston	New Orleans	Los Angeles	San Francisco	Seattle	London
U. S. PORTS:									
Boston.....			200	900	2,000	5,100	5,400	6,200	3,200
New York.....		200		600	1,700	4,900	5,300	6,000	3,400
Charleston.....		900	600		1,200	4,500	4,900	5,600	3,800
New Orleans.....		2,000	1,700	1,200		4,300	4,700	5,500	4,800
Los Angeles.....		5,100 ¹	4,900 ¹	4,500 ¹	¹ 4,300		400	1,100	7,700
San Francisco.....		5,400 ¹	5,300 ¹	4,900 ¹	¹ 4,700	400		800	8,000
Seattle.....		6,200 ¹	6,000 ¹	5,600 ¹	¹ 5,500	1,100	800		8,800
NORTH ATLANTIC:									
Newfoundland.....	St. Johns	900	1,100	1,700	2,600	5,700 ¹	6,000 ¹	6,800 ¹	2,200
Greenland.....	Ivigtut	1,700	1,900	2,400	3,400	6,500 ¹	6,800 ¹	7,600 ¹	2,000
Iceland.....	Reykjavik	2,300	2,500	3,000	4,000	7,100 ¹	7,400 ¹	8,200 ¹	1,500
U. K.....	Liverpool	3,000	3,100	3,700	4,700	7,600 ¹	7,900 ¹	8,700 ¹	700
Norway.....	Oslo	3,900	4,100	4,500	5,600	8,400 ¹	8,700 ¹	9,500 ¹	700
Russia.....	Murmansk	3,700	3,800	4,500	5,600	8,400 ¹	8,700 ¹	9,500 ¹	1,800
CARIBBEAN & SOUTH ATLANTIC:									
Bermuda.....	Hamilton	700	700	800	1,700	4,600 ¹	4,900 ¹	5,800 ¹	3,200
Puerto Rico.....	San Juan	1,500	1,400	1,100	1,500	3,900 ¹	4,300 ¹	5,100 ¹	3,800
Trinidad.....	Port of Spain	2,000	1,900	1,700	2,100	4,100 ¹	4,400 ¹	5,300 ¹	4,000
Brazil.....	Rio de Janeiro	4,700	4,800	4,700	5,200	7,200 ¹	7,600 ¹	8,400 ¹	5,300
Argentina.....	Buenos Aires	5,800	5,900	5,800	7,300	8,300 ¹	8,700 ¹	9,600 ¹	6,400
MEDITERRANEAN:									
Italy.....	Naples	4,000 ²	4,200 ²	4,600 ²	5,500	8,300 ¹	8,600 ¹	9,400 ¹	2,400
Algeria.....	Algiers	3,400 ²	3,600 ²	4,000	5,000	7,700 ¹	8,000 ¹	8,800 ¹	1,800

240. SAILING DISTANCES (Continued):

MIDDLE EAST:									
Egypt.....	Port Said	4,900	5,100	5,500	6,500	9,200	9,500	10,300	3,300
Red Sea.....	Aden	6,300	6,500	6,900	7,900	10,600	10,900	11,700	4,700
Turkey.....	Istanbul	4,800 ¹	5,000 ²	5,400	6,400	9,100	9,400	10,200	3,200
Persian Gulf.....	Basra	8,300 ²	8,500 ²	8,900	9,800	12,600	12,900	13,700	6,700
NORTH PACIFIC:									
Alaska.....	Dutch Harbor	7,400 ¹	7,300 ¹	6,900	6,700	2,400	2,100	1,700	10,100
CENTRAL PACIFIC:									
Hawaii.....	Pearl Harbor	6,900 ¹	6,700 ¹	6,300	6,100	2,200	2,100	2,400	9,500
SOUTH PACIFIC:									
New Guinea.....	Finschhafen	10,200 ¹	10,000 ¹	9,600 ¹	9,400 ¹	6,100	5,900	6,000	12,800
Philippine Islands.....	Manila	11,600 ¹	11,300 ¹	11,000	10,800	6,600	6,300	6,100	14,200
Japan.....	Yokohama	9,900 ¹	9,600 ¹	9,500	9,100	4,800	4,500	4,200	12,500
SOUTHWEST PACIFIC:									
Australia.....	Brisbane	9,900 ¹	9,600 ¹	9,300 ¹	9,100 ¹	6,300	6,200	6,500	12,100 ²
Australia.....	Melbourne	10,100 ¹	9,900 ¹	9,500 ¹	9,400 ¹	7,000	7,000	7,300	11,200 ²
CHINA-BURMA-INDIA:									
China.....	Shanghai	10,800 ¹	10,600 ¹	10,200 ¹	10,000 ¹	5,700	5,400	5,100	13,400 ¹
India.....	Calcutta	9,600	9,800 ²	10,200 ²	11,200 ²	13,900 ²	14,200	15,000	8,000 ²
India.....	Bombay	8,000	8,200 ²	8,600 ²	9,500 ²	12,200 ²	12,600	13,400	6,400

¹ Via Panama² Via Gibraltar

■ 241. TURNAROUNDS.—Turnaround time includes time of loading at home port, steaming time to and from destinations, unloading and loading time at destinations, and unloading time at home port. To estimate turnaround time, steaming time may be computed at:

240 miles per day on cargo ships, or

360 miles per day on troopships

Plus 10% delay

Plus 25 days of port time.

However, since port loading facilities and delays vary widely, actual experience turnarounds for certain areas are listed below:

<i>Areas</i>	<i>Turn Around (Days)</i>	
	<i>Trans- ports</i>	<i>Cargo</i>
BOSTON TO:		
Newfoundland.....	30	41
Greenland.....	45	103
Iceland.....	45	111
NEW YORK TO:		
United Kingdom.....	42	75
North Africa—		
Atlantic Ports.....	34	79
Mediterranean Ports.....	56	101
South Africa.....	60	120
Near East via Mediterranean.....	75	110
Near East via Cape of Good Hope.....	120	226
Indian Ports via Cape of Good Hope.....	110	204
via Mediterranean.....		158
CHARLESTON TO:		
Bermuda.....	15	20
NEW ORLEANS TO:		
Puerto Rico.....	25	35
Trinidad.....	30	60
Panama.....	25	35
SAN FRANCISCO TO:		
Hawaii.....	30	39
South Pacific.....	64	111
Southwest Pacific.....	56	108
Near East via Australia.....	120	210
India.....	100	159
SEATTLE TO:		
Alaska.....	30	45

■ 242. SHIP TO SHORE MOVEMENT.—a. Experience indicates the following guides in unloading supplies from ship-to-shore:

- (1) In the unloading area, provide maximum number of available landing craft and LCTs.
- (2) Make available LCT for each cargo vessel being unloaded at any one time.

242. SHIP TO SHORE MOVEMENT (Continued) :

- (3) Carry on each cargo vessel a completely assembled ponton barge under each jumbo boom.
- (4) Provide with each LST 1 LCT and in addition at least 4 ponton sections hanging on the side, except where ponton causeways are provided.

b. Equipment and rate of unloading are indicated by experience as follows:

- (1) 1 LCT should take about 2 hours loading at the ship, 45 minutes to travel to the beach, 2 hours to unload, and another 45 minutes to return to ship; thus a round trip every 6 hours, spending $\frac{1}{3}$ of its time beached.
- (2) An LCM should spend about $\frac{1}{8}$ of its time unloading and an LCV about $\frac{1}{10}$, by similar reasoning.
- (3) A $2\frac{1}{2}$ -ton truck should take 10 minutes to load, 10 minutes to reach its dump, 10 minutes to unload, and 10 minutes to return to the beach.
- (4) 1 crane on the beach should be able to handle 3 LCT's or 8 LCM's or 10 LCVP's, and 4 trucks should work with each crane.
- (5) Example: Assume 6 LCT's, 60 LCM's and 200 LCVP's active in unloading a force large enough to lift a division. This would require 30 cranes on shore and an additional 30 at the dumps and 120 trucks.
- (6) The figures above on cranes and trucks might be reduced in instances of availability of manpower, of dragging pallets by tractors, and of storing supplies near the water. Also availability of nets will reduce handling of loose cargo from the hole to the dump.

c. Import capacity of landing beaches is based upon the following assumptions:

- (1) 1 AKA or APA is allocated $\frac{1}{2}$ mile of beach for unloading operations.
- (2) 15 landing craft is the average that will be unloaded simultaneously on each mile of beach.
- (3) 5 landing craft can be loaded simultaneously at leeward side of a ship anchored from 8 to 5 miles offshore.
- (4) Cargo can be transferred from ship to landing craft at rate of 15 ship tons or 7 short tons per hour per hatch.
- (5) Landing craft can unload on beach at rate of 22 ship tons or 10 short tons per hour per craft.
- (6) Depending upon governing factors, beaches may be usable 24 hours per day.

242. SHIP TO SHORE MOVEMENT (Continued) :

- (7) Capacity of $\frac{1}{2}$ mile of beach (or per ship) is found by: 5 landing craft/ship $\times$ 7 short tons/hr $\times$ 24 hrs./day = 840 short tons per day. (500 short tons on 15 hr day.)
- (8) Not in excess of 75% of above indicated figures should be employed for planning purposes, so that allowance is made for normal conditions, such as errors in intelligence, weather, sea conditions, operational losses, etc.

d. A yardstick for the use of DUKWs may be obtained by saying that about 37 DUKWs (or 77% of company strength) should continuously average about 6 ton-miles per hour. At this rate a company should handle about:

$$50 \times 0.77 \times 6 \text{ ton-miles/hr} \times 24 \text{ hrs} = \text{approximately} \\
\begin{array}{l}
5,000 \text{ ton-miles per day or} \\
2,500 \text{ tons per day}
\end{array}$$

Figuring 5 hatches with 7 DUKWs per hatch, this corresponds to a hatch rate of about 21 tons per hatch per hour—obtainable with suitable cargo, proper equipment, and trained stevedores.

- (1) However, most ships are not loaded homogeneously, therefore above rate will apply only to fragments of the cargo. Because of this and other difficulties a rate of 1,000 to 1,500 tons per day per DUKW company may be accepted as average performance.
- (2) Standard loads are 5,000 pounds, except in the case of low density cargo such as QM stores where the maximum practical is frequently about 4,000 pounds. Permissible loads have proven heavier and are now up to 10,000 pounds where conditions are ideal. On the average it is found that 1 DUKW should discharge about 3 tons over a combined water-land distance of about 2 miles in about 1 hour.

■ 243. SHIPPING REQUIREMENTS OF CERTAIN MAJOR T/O UNITS:

1	2	3	4	5	6	7	8	9	10
T/O	Unit	Strength	Number of Veh & Wheeled Guns	Organizational Equipment ^{1 2}			30 Day's Maintenance ⁴ M/T	30 Day's Gallons ⁵	Gas & Oil Drums M/T
				GP Veh and Guns Boxed ³	All other Vehicles On Wheels	All Vehicles On Wheels			
				M/T	M/T	M/T			
3-27	Wpns Co, Cml Bn, Mtz.....	167	86	322		513	184	19,350	117
5-15	Engr C Bn.....	637	137	1,500	844	3,326	701	30,825	187
5-87	Engr L Pon Co.....	211	137	1,455 ⁶	1,006	3,261 ⁶	232	30,825	187
5-157	Engr Maint Co.....	191	70	657	818	1,868	210	15,750	95
5-192	Hq & Hq Co, Engr C Gp.....	81	25	159	8	222	89	5,625	34
5-367	Engr L Equip Co.....	118	76	314	2,784	3,284	130	17,100	104
5-415	Engr Bn (Avn).....	807	234	1,445	3,654	6,073	888	52,650	319
6-25	FA Bn (105-mm How).....	509	146	1,563		2,450	560	32,850	199
6-35	FA Bn (155-mm How).....	507	130	1,313	767	2,640	558	29,250	177
6-77	FA Obs Btry.....	150	39	448		666	165	8,775	53
6-125	FA Bn (155-mm Gun).....	506	115	984	1,052	2,486	557	25,875	157
6-225	FA Bn, 75-mm Pk How, Gli.....	372	125	443		693	409	28,125	170
7	Inf Div.....	14,253	2,230	19,088	2,167	32,169	15,678	501,750	3,041
7-11	Inf Regt.....	3,207	355	2,369	45	3,793	3,528	79,875	484
7-31	Inf Regt (Preht).....	2,072	123	570	14	989	2,279	27,675	168
8-15	Med Bn.....	444	90	1,114		1,548	488	20,250	123
8-117	Med Sn Co.....	112	9	149		211	123	2,025	12
8-500	Malaria Contl Det.....	12	8	134		196	13	1,800	11
8-500	Malaria Sur Det.....	13	4	28		34	1	900	5
8-510	Fld Hosp.....	222	25	253 ⁷		370 ⁷	244	5,625	34
8-572	Portable Surg Hosp.....	37	4	30 ⁸		42 ⁸	41	900	5
9-7	Ord M Maint Co.....	176	46	411	318	1,063	194	10,350	63
9-15	Ord Bn, Am.....	1,149	60	772		1,135	1,264	13,500	82
9-17	Ord Am Co (Atchd to AAF).....	179	20	122	333	513	197	4,500	27
9-315	Ord Bn (Base) (Arm M).....	616	16	164	124	367	678	3,600	22
9-325	Ord Bn (Base) (Auto M).....	804	14	141	124	328	884	3,150	19
10-55	QM Trk Bn.....	467	423	5,266		9,622	514	95,175	577
10-67	QM Sv Co.....	219	4	41		65	241	900	5
10-77	QM Gas Sup Co.....	128	50	601		1,062	141	11,250	68

243. SHIPPING REQUIREMENTS OF CERTAIN MAJOR T/O UNITS (Continued):

1	2	3	4	5	6	7	8	9	10
T/O	Unit	Strength	Number of Veh & Wheeled Guns	Organizational Equipment ^{1,2}			30 Day's Maintenance ⁴ M/T	30 Day's Gallons ⁵	Gas & Oil Drums M/T
				GP Veh and Guns Boxed ³	All other Vehicles On Wheels	All Vehicles On Wheels			
				M/T	M/T	M/T			
10-97	QM Remount Co.....	154	14	112	26	175	169	3,150	19
10-297	QM Gr Reg Co.....	125	28	203		289	138	6,300	38
10-536	Hq & Hq Det, QM Bn.....	20	6	37		66	22	1,350	8
11-25	Sig Bn (Cons).....	455	175	1,555	852	3,291	501	39,375	239
11-147S	Sig Co, Joint Assault.....	502	83	336	25	526	552	18,675	113
11-400	Sig A W Orgn Sv Team.....	31	11	163		260	34	2,475	15
17	Armd Div.....	10,998	2,684	15,890	32,741	60,176	27,142	1,756,946	10,648
17-15	Tk Bn (L).....	532	156	697	2,156	3,378	585	35,100	213
17-25	Tk Bn.....	720	212	1,195	3,824	5,919	792	47,700	289
17-115	Amph Tk Bn.....	748	129	502	4,977	5,782	823	29,025	176
17-125	Amph Trac Bn.....	502	149	356	6,785	7,373	552	33,525	203
18-25	TD Bn.....	644	193	970	2,490	4,116	708	43,425	263
19-35	MP Bn (Army).....	566	77	453		679	623	17,325	105
19-37	MP Co.....	170	22	115		169	187	4,950	30
44-12	Hq & Hq Btry, AA Gp.....	65	15	107		141	72	3,375	20
44-15	CA Bn (AA) (Gun) (M).....	758	207	1,318	2,901	5,195	834	46,575	282
44-25	CA Bn (AA) (AW) (M).....	801	224	2,801	717	5,066	881	50,400	305
44-75	AAA AW Bn SP.....	702	228	826	2,232	4,153	772	51,300	311
44-135	CA Bn (AA) SL (S) (Type A).....	801	193	951	4,302	5,708	881	43,425	263
44-278	AAA MG Btry Abn AA Bn.....	74	14	3		3	81	3,150	19
55-37	Amph Trk Co.....	180	56	44	2,928	2,988	198	12,600	76
55-500	Hq & Hq Co, TC Sv Bn.....	33	7	50		74	36	1,575	10
55-500	Stevedore Sec, TC.....	102	10	12	61	74	112	2,250	14
	Bomb Gp (H) (Less planes).....	1,802	326	1,205	2,646	4,451	1,982	808,845	4,902
	Bomb Gp (M) (Less planes).....	1,624	322	1,186	1,823	3,584	1,786	543,495	3,294
	Bomb Gp (L) (Less planes).....	1,190	301	1,082	1,695	3,425	1,309	540,510	3,276
	Ftr Gp (TE) (Less planes).....	1,332	282	1,173	1,298	3,176	1,465	551,677	3,343
	Ftr Gp (SE) (Less planes).....	1,236	242	1,032	1,050	2,641	1,360	428,482	2,597

243. SHIPPING REQUIREMENTS OF CERTAIN MAJOR T/O UNITS (Continued) :

NOTES

¹ Other than vehicles and wheeled guns add .25 M/T per man for organizational equipment.

² All computations without stowage.

³ General Purpose Trucks ($\frac{1}{4}$ ton through $2\frac{1}{2}$ ton) boxed tonnage computed on basis of single unit pack.

⁴ Maintenance computed on basis of 1.1 measurement tons per man per month excluding ammunition and gasoline and oil, except for armored element which includes 25% replacement of vehicles monthly in addition to normal maintenance. Requirements for any month are based on figures in this column plus necessary ammunition and gasoline and oil.

⁵ Gasoline requirements for ground troops computed on a basis average of 7.5 gallons per day per vehicle. Armored element use based on armored force data. Air force requirements based on 60 hours of operation per month for each engine at a consumption rate of 70 gallons per hour per engine; plus gas and oil for vehicles on a basis average of 7.5 gallons per day.

⁶ Add 860 M/T for Engineer Heavy Lift Equipment.

⁷ Add 110 M/T for Medical Unit Equipment.

⁸ Add 18 M/T for Medical Unit Equipment.

■ 244. SHIPPING CONVERSION FACTORS:

Average short ton of military Sup w/stowage	equals	2.2	Ship tons
Average short ton of military Sup w/o stowage	equals	1.9	Ship tons
Deadweight tonnage	equals	1.5 ¹	Gross registered tonnage
Deadweight tonnage	equals	.85 ¹	Measurement ton- nage (Bale Cubic Capacity $\div$ 40)
Effective deadweight tonnage	equals	.80 ¹	Deadweight tonnage
Gross tonnage	equals	.6 ¹	Deadweight tonnage
Net tonnage	equals	.4 ¹	Deadweight tonnage

¹ Approximate relationships of ships of 10,000 tons DWT.

P-3600—(2)

Chapter 3

SUPPLY

	Paragraph
SECTION I. General	301-324
II. Airborne Division	325-328
III. Armored Division	329-331
IV. Infantry Division	332-334
V. Miscellaneous Units	
Antiaircraft Artillery	335-336
Armored Units, Separate	337-338
Cavalry	339-341
Chemical Warfare	342-343
Field Artillery Units, Separate	344-345
Tank Destroyer	346-347

SUPPLY

SECTION I

GENERAL

■ 301. CLASSIFICATION OF SUPPLY.—For convenience, supplies are divided into Class I, II, III, III A, IV, IV E, and V. (See FM 100-10, Par 1.)

■ 302. METHODS OF SUPPLY.—Methods of supply are generally classified as Supply Point Distribution and Unit Distribution. The descriptive term (Supply Point or Unit) indicates the *place* where the supplies are issued to the lower unit. Thus:

In *supply point distribution* each lower unit sends its own transportation to the supply point to draw supplies;

In *unit distribution* the higher unit delivers the supplies to the lower unit.

It may be desirable to provide *supply point distribution* for some units and *unit distribution* to others.

At times it is necessary for the higher unit to transport supplies part of the way from the supply point to the lower unit, meeting that unit's transportation at some intermediate rendezvous or transfer point, where the loads are transferred.

In any situation, the choice of method will depend upon the relative availability of the various trains to transport the supplies together with time and distance from the supply points to the troops.

■ 303. PROCUREMENT AND DISTRIBUTION OF SUPPLIES.—See FM 100-10, Pars 65-84, inclusive.

■ 304. TRAINS OF THE DIVISION.—*a.* The train of a unit is that portion of the unit's transportation with its accompanying personnel which operates under the immediate orders of the unit commander primarily in supply, evacuation, and maintenance. Although certain trucks may be assigned prescribed loads, their use is not limited to transporting such loads. Except for vehicles used for the movement of active weapons such as prime movers and weapons carriers, all of the large capacity trucks of a unit are considered as part of a *pool of transportation* to be used as required.

b. Trains are designated by purpose, such as ammunition train, maintenance train, medical train, kitchen and baggage train, etc. Infantry regimental and field artillery battalion trains service their units from the rear.

(1) Those trains required for immediate support (ammunition, maintenance, and medical) may be designated as *combat trains*.

304. TRAINS OF THE DIVISION (Continued) :

(2) Those trains not required for immediate support of combat (kitchen and baggage trains, administrative vehicles, etc.) may be designated as *field trains*.

c. Company trains consist of those vehicles assigned to companies or similar units by Tables of Organization and Equipment for command, reconnaissance, communication, maintenance, weapons carrying or towing, and tactical purposes.

■ 305. HANDLING OF SUPPLIES.—*a. Labor Requirements.*—For long term planning purposes labor requirements for handling supplies are computed on the average of $\frac{1}{2}$ -ton per man per hour for ten hours each day. For short periods the average is much higher.

b. *Handling Crews.*—The maximum number of men that may be employed advantageously in loading or unloading one freight car is 11 (1 foreman and 10 laborers). The optimum crew for loading or unloading average loads on army trucks is 6.

c. *Time Estimate.*—(1) For *average packaged or bundled military loads*¹ at depots, supply points, or using units; under average conditions; 6-man crew for each truck or trailer; number of trucks or trailers to be loaded or unloaded simultaneously dependent upon amount of labor available:

	Day	Night
Unloading	15 min	30 min
Loading	30 min	60 min

(2) For *prescribed loads*, under field conditions, where the amount of labor available is unlimited:

<i>Loading or Unloading</i>	<i>$2\frac{1}{2}$-Ton Truck</i> ¹	<i>1-Ton Trailer</i>
Average Time	50 min	20 min
Minimum Time	30 min	12 min

¹ See Par 306 below regarding authorized 100% overhead for certain vehicles under some conditions and double time estimates when necessary.

■ 306. TRUCK LOADING CAPACITIES.—Rated tonnage capacity is in addition to weight of driver and assistant driver (200 lbs. each). Prescribed loads should conform. Maximum pay loads on roads and cross-country, maximum towable loads, and maximum safe speeds are shown on the caution plate attached to each vehicle. Cir 212, May 44 Par 2, states as follows: "An overload not to exceed 100% is authorized for all general purpose vehicles of all-wheel drive type up to and including $2\frac{1}{2}$ -ton, 6x6, when operating under favorable conditions on smooth hard-surfaced roads. Trailers will not be loaded beyond established pay load capacities."

■ 307. PRESCRIBED LOAD.—The prescribed load of a unit is a specified quantity of each type of supplies to be carried by that unit, both by its personnel and in its transportation. The establishment of this load is a command decision and is dependent upon the tactical situation as well as upon the capacity of unit transportation. The prescribed load of vehicle(s) may be unloaded at any time in order that the vehicle(s) may be used for other purposes. (FM 100-10, Par 204.)

■ 308. DAY OF SUPPLY.—*a.* (See FM 100-10, Par 1) The *estimated average daily expenditure* of various items of supply in campaign. This table is on an *overall* basis considering the requirements of Ground, Air, and Service operations, and is for *planning* purposes only. Requirements in various theaters differ widely and fluctuate frequently.

MAINTENANCE FACTORS

1	Item	Pounds per Man per Day	Tons per Man per Month	Conver- sion Factor Short Tons to Ship Tons (¹)	Ship Tons per Man per Month	Ship Tons per Man per Month With 15% Stowage
2	CLASS I Rations.....	5.33	.080	2.1	.168	.193
3	CLASS II QM Clothing and Equipage.....	.84	.013	2.9	.038	.044
4	QM General Supplies.....	.60	.009	2.8	.025	.029
5	Ordnance Vehicle Replacement.....	1.87	.028	2.2	.062	.071
6	Engineer.....	1.00	.015	3.3	.050	.057
7	Ordnance.....	.67	.010	1.8	.018	.021
8	Chemical.....	.60	.009	2.3	.021	.024
9	Signal.....	.32	.005	3.8	.019	.022
10	Medical.....	.13	.002	2.5	.006	.007
11	Transportation.....	.02	.0003	2.4	.0007	.001
12	Total Class II.....	6.05	.091		.240	.276
13	CLASS III Gas, oil, grease ² (less AC).....	8.26	.124	1.5	.186	.214
14	AC fuel and lubricants ²	13.38	.201	1.5	.301	.346
15	Subtotal.....	21.64	.325		.487	.560
16	Less 90% assumed shipped by tanker.....	19.48	.292		.438	.504
17	Shipped as dry cargo.....	2.16	.032		.049	.056
18	Fuel for Temperate Zone.....	8.50	.127	2.0	.255	.293
19	Total Class III (excl add'l fuel requirements for Arctic Zone ⁴	10.66	.159		.304	.349
20	CLASS IV Medical.....	.27	.004	2.9	.012	.013
21	Ordnance Motor Maintenance.....	.51	.008	1.0	.008	.009
22	QM Sales Items.....	2.00	.030	1.7	.051	.059
23	AC Supply and Replacement.....	2.84	.043	4.0	.170	.196
24	Engineer Construction Material.....	11.90	.179	1.5	.268	.308
25	Total Class IV.....	17.52	.264		.509	.585
26	CLASS V Ammunition (less AC).....	5.17	.078	0.9	.070	.081
27	AC Ammunition.....	4.41	.066	0.9	.059	.068
28	Total Class V.....	9.58	.144		.129	.149
29	TOTAL, TEMPERATE ZONE.....	49.14	.738		1.350	1.552

308. DAY OF SUPPLY (Continued) :

MAINTENANCE FACTORS (Continued)

1	Item	Pounds per Man per Day	Tons per Man per Month	Conver- sion Factor Short Tons to Ship Tons (¹)	Ship Tons per Man per Month	Ship Tons per Man per Month With 15% Stowage
30	Add'l fuel requirements for Arctic Zone.....	18.50	.277	2.0	.555	.638
31	TOTAL, ARCTIC ZONE.....	67.64	1.015	.....	1.905	2.190

¹ *Conversion Factors* are based on average cubage for each item. Ship tons (40 cu ft of any one item can be found by multiplying its Short Ton (2000 lb) weight by that item's *Conversion Factor*.

² 2% grease and lubes, 98% gas and oil.

³ AC Class IIIA.

⁴ Includes only 10% Class III and IIIA shipped as dry cargo.

308. DAY OF SUPPLY:

b. Theater "A"—The estimated average daily expenditure of various items of supply in campaign in a Theater of Operations involving a *Continental land mass in a temperate zone.*

MAINTENANCE FACTORS

1	Item	Pounds per Man per Day	Tons per Man per Month	Conver- sion Factor Short Tons to Ship Tons (¹)	Ship Tons per Man per Month	Ship Tons per Man per Month With 15% Stowage
2	CLASS I Rations.....	7.169	0.108	2.1	.227	.261
3	CLASS II QM Clothing and Equipage.....	0.426	0.006	2.0	.012	.014
4	QM General Supplies.....	0.305	0.005	2.8	.014	.016
5	Ordnance Vehicle Replacement.....	0.620	0.009	2.2	.020	.023
6	Engineer.....	0.630	0.009	3.3	.030	.035
7	Ordnance.....	2.710	0.041	1.8	.074	.085
8	Chemical.....	0.025	0.001	2.3	.002	.002
9	Signal.....	0.725	0.011	3.8	.042	.048
10	Medical (Incl CI IV & I).....	0.300	0.005	2.5	.013	.015
11	Transportation.....	Negligible				
12	Total Class II.....	5.741	0.086		.207	.238
13	CLASS III Gas, oil, grease ² (less AC).....	11.368	0.171	1.5	.257	.296
14	AC fuel and lubricants ²	13.380	0.201	1.5	.302	.347
15	Subtotal.....	24.748	0.371	1.5	.557	.641
16	Less 90% assumed shipped by tanker.....	22.273	0.334	1.5	.501	.576
17	Shipped as dry cargo (10%).....	2.475	0.037	1.5	.056	.064
18	Fuel for Temperate Zone.....	8.500	0.128	2.0	.256	.294
19	Total Class III ⁴	10.975	0.164		.312	.358
20	CLASS IV Medical (Incl in CI II).....					
21	Ordnance Motor Maintenance.....	0.510	0.008	1.0	.008	.009
22	QM Sales Items.....	2.000	0.030	1.7	.051	.059
23	AC Supply and Replacement.....	2.840	0.043	4.0	.172	.198
24	Engineer Construction Material.....	7.280	0.109	1.5	.164	.189
25	Total Class IV.....	12.630	0.189		.395	.455
26	CLASS V Ammunition (less AC).....	3.640	0.055	0.9	.050	.058
27	AC Ammunition.....	4.410	0.066	0.9	.059	.068
28	Total Class V.....	8.050	0.121		.109	.126
29	TOTAL, TEMPERATE ZONE.....	44.565	0.668		1.250	1.438

See Notes 1, 2, 3, and 4 on Page 6.

308. DAY OF SUPPLY:

c. Theater "B"—The estimated average daily expenditure of various items of supply in campaign in a Theater of Operations *wherein the bulk of operations are amphibious in nature.*

MAINTENANCE FACTORS

1	Item	Pounds per Man per Day	Tons per Man per Month	Conver- sion Factor Short Tons to Ship Tons (1)	Ship Tons per Man per Month	Ship Tons per Man per Month With 15% Stowage
2	CLASS I Rations.....	6.708	.101	1.5	.152	.175
3	CLASS II QM Clothing and Equipage.....	1.000	.015	2.5	.038	.044
4	QM General Supplies.....	0.730	.011	2.5	.028	.023
5	Ordnance Vehicle Replacement....	0.620	.009	4.2	.038	.044
6	Engineer.....	0.370	.006	1.5	.009	.010
7	Ordnance.....	0.300	.005	4.2	.021	.024
8	Chemical.....	0.567	.009	1.4	.013	.015
9	Signal.....	0.750	.011	2.0	.022	.025
10	Medical (Incl CI IV & I).....	0.330	.005	3.0	.015	.017
11	Transportation.....	0.130	.002	2.4	.005	.006
12	Total Class II.....	4.797	.072		.189	.217
12	CLASS III Gas, oil, grease ² (less AC).....	10.813	.162	1.5	.243	.279
13	AC fuel and lubricants ³	11.080	.166	1.5	.249	.286
14	Subtotal.....	21.893	0.328	1.5	.492	.566
15	Less 90% assumed shipped by tanker.....	19.704	0.296	1.5	.444	.511
16	Shipped as dry cargo (10%).....	2.189	0.033	1.5	.050	.058
17	Fuel for Temperate Zone.....	8.500	.128	2.0	.256	.294
18	Total Class III ⁴	10.689	.160		1.734	1.994
19	CLASS IV Medical (Incl in CI II).....					
20	Ordnance Motor Maintenance.....	0.180	.003	1.0	.003	.003
21	QM Sales Items.....	1.972	.030	1.7	.051	.059
22	AC Supply and Replacement.....	2.840	.043	4.0	.172	.198
23	Engineer Construction Material....	11.900	.179	1.5	.268	.308
24	Total Class IV.....	16.892	.253		.494	.568
25	CLASS V Ammunition (less AC).....	5.140	.077	4.2	.323	.371
26	AC Ammunition.....	3.470	.052	0.67	.035	.040
27	Total Class V.....	8.610	.129		.358	.411
28	TOTAL, TEMPERATE ZONE.....	67.400	1.011		2.927	3.365

See Notes 1, 2, 3, and 4 on Page 6.

308. DAY OF SUPPLY:

d. Theater "C"—The estimated average daily expenditure of various items of supply in campaign in a Theater of Operations wherein the bulk of operations involve *Jungle Warfare*.

MAINTENANCE FACTORS

1	Item	Pounds per Man per Day	Tons per Man per Month	Conver- sion Factor Short Tons to Ship Tons (¹)	Ship Tons per Man per Month	Ship Tons per Man per Month With 15% Stowage
2	CLASS I Rations.....	6.090	.091	1.5	.137	.158
3	CLASS II QM Clothing and Equipage.....	0.680	.010	2.5	.025	.029
4	QM General Supplies.....	0.503	.008	2.5	.020	.023
5	Ordnance Vehicle Replacement.....	0.620	.009	4.2	.038	.044
6	Engineer.....	0.300	.005	1.5	.075	.086
7	Ordnance.....	0.250	.004	4.2	.017	.020
8	Chemical.....	0.030	.001	1.4	.001	.001
9	Signal.....	0.260	.004	2.0	.008	.009
10	Medical (Incl CI IV & I).....	0.220	.003	3.0	.009	.010
11	Transportation.....	0.130	.002	2.4	.005	.006
12	Total Class II.....	2.993	.045		.198	.228
12	CLASS III Gas, oil, grease ² (less AC).....	10.813	.162	1.5	.243	.279
13	AC fuel and lubricants ²	11.080	.166	1.5	.249	.286
14	Subtotal.....	21.893	.328	1.5	.492	.566
15	Less 90% assumed shipped by tanker.....	19.704	.296	1.5	.444	.511
16	Shipped as dry cargo (10%).....	2.189	.033	1.5	.050	.058
17	Fuel for Temperate Zone.....	Negligible				
18	Total Class III ⁴	2.189	.033		1.478	1.700
19	CLASS IV Medical (Incl in CI II).....					
20	Ordnance Motor Maintenance.....	0.180	.003	1.0	.003	.003
21	QM Sales Items.....	2.812	.042	1.7	.071	.082
22	AC Supply and Replacement.....	2.840	.043	4.0	.172	.198
23	Engineer Construction Material.....	11.900	.179	1.5	.268	.308
24	Total Class IV.....	17.732	.266		.514	.591
25	CLASS V Ammunition (less AC).....	5.140	.077	4.2	.323	.371
26	AC Ammunition.....	3.470	.052	0.67	.035	.040
27	Total Class V.....	8.610	.129		.358	.411
28	TOTAL, TROPIC ZONE.....	57.318	.860		2.685	3.088

See Notes 1, 2, 3, and 4 on Page 6.

308. DAY OF SUPPLY:

e. The following table presents the *estimated average Maintenance Factors for ground combat supplies within the combat zone only* under normal combat conditions in the various Theaters described in Par 308 b., c., and d. above.

	1	2	3	4
1	Class	Theater "A" Pounds per Man per Day	Theater "B" Pounds per Man per Day	Theater "C" Pounds per Man per Day
2	I.....	7.776	6.110	6.090
3	II & IV.....	9.557	9.028	8.826
4	III.....	11.763	8.500	5.800
5	V.....	12.822	9.800	6.000
6	TOTAL.....	41.918	33.438	29.416

f. The following figures represent average Maintenance Factors for *ground combat supplies only* based on experiences with an *Army Group* under normal offensive conditions in the European Theater of Operations.

	1	2	3
1		Normal Combat (lbs/man/day)	Rapid Advance (lbs/man/day)
2	Class I.....	7.776	7.896
3	Class II & IV ¹ :		
4	CWS.....	0.048	0.094
5	Engr.....	3.136	3.673
6	Med.....	0.120	0.107
7	Ord.....	0.352	2.834
8	QM.....	0.937	0.659
9	Sig.....	0.964	0.710
9	Total Class II & IV.....	9.557	8.077
10	Class III.....	11.763	16.110
11	Class V.....	12.822	8.698
12	Total.....	41.918	40.781

¹ *Based on average field strength.

308. DAY OF SUPPLY:

g. The following Maintenance Factors are from the European Theater of Operations and reflect *average consumption rates* of all supplies, based on issues to subordinate units by an Army during the *first phases* of the *Occupation of an Area*.

	1	2	3
	Class	Requirements for all personnel in area, ¹ based on field strength of Army (lbs/man/day)	Requirements for Army only, less excess personnel in area (lbs/man/day)
2	I.....	7.7459	6.8467
3	II & IV ² :		
4	CWS.....	0.0110	0.0110
5	Engr.....	0.4363	0.4363
6	Med.....	0.0414	0.0366
7	Ord.....	1.8448	1.8448
8	QM.....	0.4555	0.4026
9	Sig.....	0.1809	0.1809
9	Total II & IV.....	2.9699	2.9122
10	III.....	12.9313	11.4300
11	V.....	0.0841	0.0841
12	Total.....	23.7312	21.2730

¹ Includes repatriates, prisoners of war, etc.

² Excess personnel shares only in consumption of Med Class I & III and QM Class II & IV.

■ 309. SHIPPING REQUIREMENTS FOR BUILD-UP OF RESERVE SUPPLY.—a. For estimation of shipping requirements where it is desired to build up a certain reserve of supplies by a given date, at the same time adequately supplying present and future contemplated operations during the build-up period, the following formula is useful:

$$S = C \left(1 + \frac{L}{T} + W \right)$$

$$S = C \left(1 + \frac{L}{T} + W \right)$$

where

S equals *shipping requirements* during the build-up phase, expressed in pounds per day.

C equals *consumption* (average) in pounds per day.

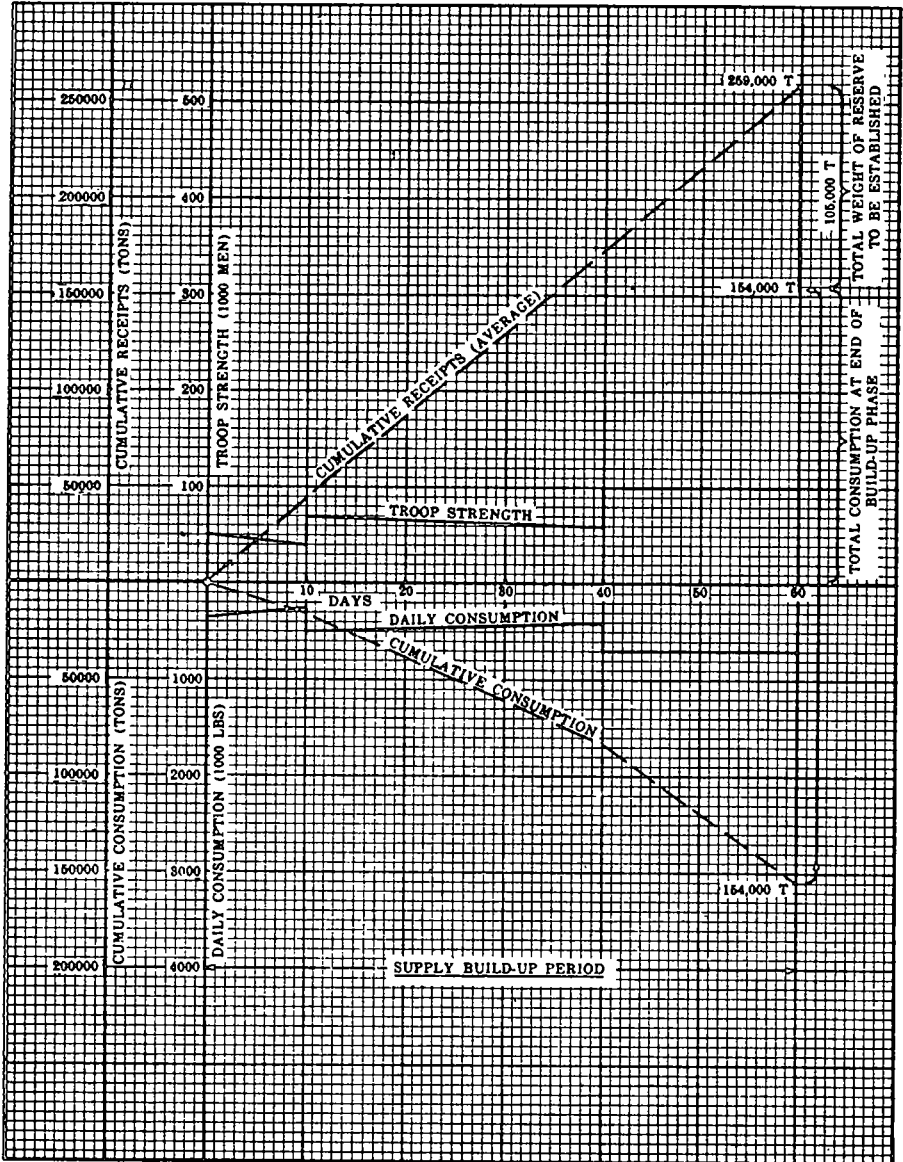
W equals a *wastage factor*, based on experience in the particular Theater.

L equals the *supply level to be attained*, expressed in days of supply.

T equals *time-length of build-up phase* in days.

309. SHIPPING REQUIREMENTS FOR BUILD-UP OF RESERVE SUPPLY:

b. Since the formula in Par 309 *a* above assumes a constant troop strength, a chart similar to the following may be used to show the relation between changes in troop strength, the cumulative consumption, and cumulative receipts in the establishment of a specified level of reserve supply during a given build-up period.



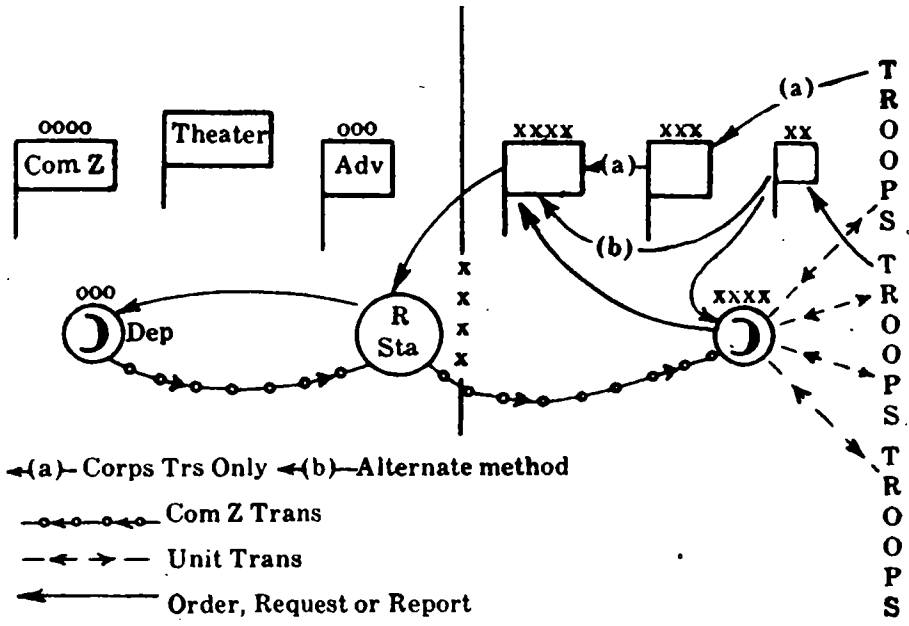
■ 310. BASIC DATA CLASS I SUPPLIES :

CHARACTERISTICS OF STANDARD RATIONS

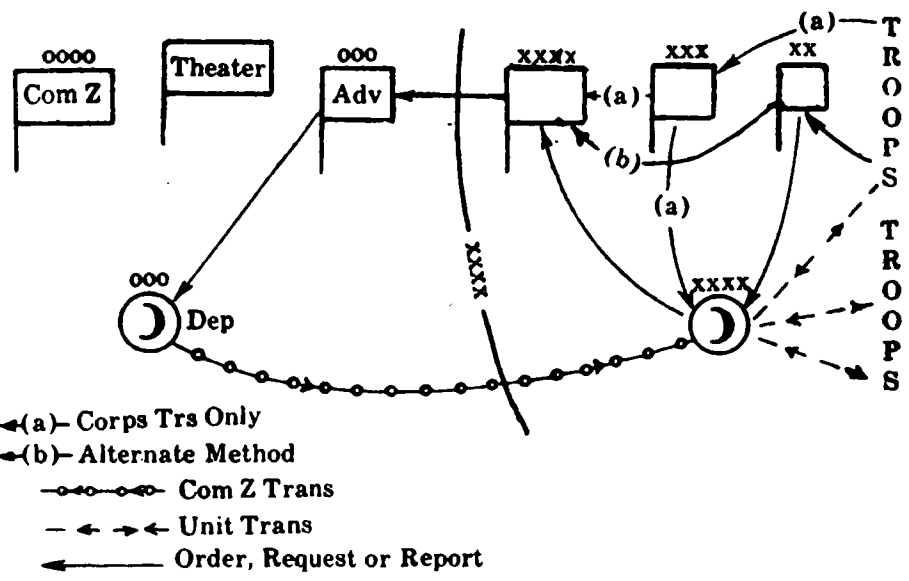
	1	2	3	4	5	6	7
1	Type Ration	Packaging Information			Average Weight per Ration Includ- ing Pack- ing (lbs.)	Average Weight per Ration Un- packed (lbs.)	Remarks
		Number Rations per Package	Weight per Package (lbs.)	Volume per Package (cu. ft.)			
2	"A"	.....	.....	.....	6.0	6.0	Components, weight, and volume vary. For planning purposes weight may be taken as 6.0 lbs per ration; volume as 0.1462 cu. ft. per ration. Contains fresh meat, fresh fruits and vegetables and other perishable items.
3	"B"	.....	.....	.....	6.0	6.0	Same as "A" ration with non-perishable items substituted for perishable.
4	"C"	8	42.0	1.1	5.25	4.0	Prepared meals in individual cans. Individual ration consists of 3 cans of meat component, 3 cans "B" unit and 1 accessory packet. "B" unit contains biscuits, confection, and beverage powder. May be consumed hot or cold.
5	"D"	48	51.0	1.09	1.06	0.75	Individual ration consists of three 4-ounce chocolate bars.
6	"K"	12	43.0	1.2	3.58	2.30	Non-perishable, concentrated meals in individual packages. 3 packages per ration. May be consumed hot or cold.
7	"10 in 1"	10	45.0	1.4	4.5	.....	Non-perishable. Components comparable to "B" ration. Contains canned, evaporated, and dehydrated foods. Lunch is packed separately and may be issued individually.
8	Special Hospital Ration	25	60.0	1.6	2.4	.....	Non-perishable, easily digestible, concentrated foods packed in tin containers. Designed to supplement the regular field ration in overseas hospitals. Standard package contains supplemental rations for 25 men.
9	Grain	.....	.....	.....	.....	10	Average for horses and mules. Cut 50% on ship.
10	Hay	.....	.....	.....	.....	14	Average for horses and mules.

■ 311. DIAGRAM OF CLASS I SUPPLY:

a. A method of supply when a regulating station is used:



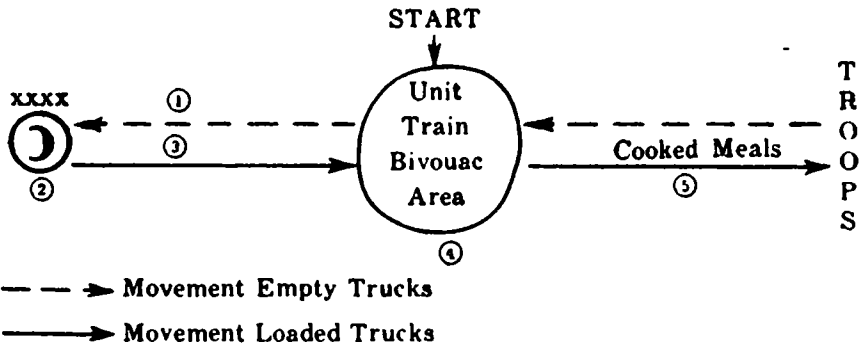
b. A method of supply when no regulating station is used:



¹ If Communication Zone transportation cannot put supplies within reach of using troops, then Army, using its transportation, will establish advance supply points.

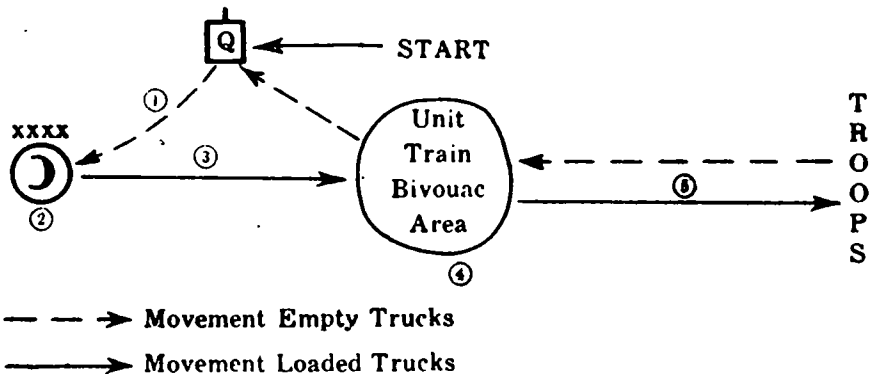
■ 312. DIAGRAM OF DISTRIBUTION OF CLASS I SUPPLIES:

a. *Supply Point Distribution:*



- ① Unit (Inf Regt, FA Bn etc) Trucks go to ② Cl I Supply Point, where rations for the unit are drawn in bulk. ③ Trucks then return to unit kitchen train bivouac area ④ where ration is divided into Company or Battery lots and ⑤ cooked meals sent to troops.

b. *Unit Distribution:*



- ① Division Quartermaster Trucks go to ② Cl I Supply Point, draw rations for the unit and deliver to the unit train bivouac area. (See note ④ & ⑤ above.)

■ 313. TIME ELEMENTS IN CLASS I SUPPLY.—While the figures shown in this table are an approximate *average* for combat conditions, they should be used as a guide only where actual experience is lacking.

1	2	3	4
	Work	Daylight	Dark
2	Unload rations for one Division at Class I supply point and prepare for distribution to regiments or separate battalions.	2 hours	2½ hours
3	Distribution of Class I supplies to regiment by higher echelon at one supply point	½ hour	½ hour
4	Distribution of Class I supplies to separate battalion by higher echelon or similar unit	¼ hour	¼ hour
5	Preparation of one day's Class I supplies for issue at regimental or battalion Class I supply point	½ hour	1 hour
6	Physical distribution by regimental supplies agencies of one field ration (transfer of loads) to kitchens	15 min	20 min
7	Kitchens to be taken off trucks, set up, and ready to begin cooking (or vice versa)	20 min	20 min
8	Division of one ration into three meals at kitchens	15 min	20 min
9	Kitchens to cook and prepare for serving a hot meal, starting with a hot kitchen	120 min	150 min
10	Kitchens to prepare a cold noon meal. The issue of this meal to take place usually coincident with serving of breakfast. (Included in item next above.)	60 min	90 min
11	Serving a hot meal to troops from a kitchen truck when majority of men are served at the truck	45 min	60 min
12	Serving a hot meal to troops by means of carrying parties (assuming the kitchen truck not farther than 1,000 yards in rear of the company)	90 min	120 min

■ 314. BASIC DATA—CLASS III SUPPLY:

a. Vehicle Fuel and Lubricant Data.

	1	2	3	4	5	6	7
	Vehicle	Vehicle fuel tank capacity (gallons)	Miles per gallon of fuel	Gallons of fuel per 100 miles	Gallons of oil per 100 miles	Pounds gear lube per 100 miles	Pounds Misc grease per 100 miles
2	Car, armored, light, M8.....	59	7.5	13.3	1.5	0.6	0.9
3	Car, armored, utility, M20.....	56	7.0	14.3	1.5	0.5	0.9
4	Car, 5 passenger.....	16	4.0	7.0	0.1	0.1	0.1
5	Carriage, motor, 75-mm How, M8.....	89	1.5	66.7	5.2	.....	1.5
6	Carriage, motor, 3" gun, M10A1.....	165	1.4	71.4	11.0	.....	2.4
7	Carriage, motor (76-mm gun), M18 ¹	160	1.0	100.0	11.0	.....	2.4
8	Carriage, motor (105-mm How), M7.....	175	1.0	100.0	11.0	.....	2.4
9	Carriage, motor, 155-mm Gun, M12.....	200	0.8	125.0	11.0	.....	2.4
10	Carrier, cargo, M29.....	25	7.0	14.3	1.5	.....	0.5
11	Carrier, cargo, M30.....	200	0.9	111.1	11.0	.....	2.4
12	Half-track vehicles ²	60	3.3	30.3	1.1	0.7	1.2
13	Motorcycle, solo.....	3.5	42.0	2.4	0.2	.....	.....
14	Plane, liaison.....	14	17.9	5.6	0.2	.....	.....
15	Motor, scooter.....	2.0	50.0	2.0	0.2	.....	.....
16	Tank (L), Abn, T9E1.....	55	2.5	40.0	(³)	(³)	(³)
17	Tank, light ³	115	1.4	71.4	5.2	.....	1.5
18	Tank, medium ⁴	175	0.8	125.0	11.0	.....	2.4
19	Truck, 1/4-ton.....	15	20.0	5.0	0.2	0.2	0.2
20	Truck, 3/4-ton.....	20	8.0	12.5	0.3	0.6	0.2
21	Truck, 1 1/2-ton, 4x4.....	30	9.0	11.1	0.5	0.7	0.2
22	Truck, 2 1/2-ton, 6x6.....	40	7.5	13.3	0.6	0.9	0.3
23	Truck, crane, M2.....	100	1.5	66.7	0.7	0.7	0.5
24	Truck, 4-ton, 6x6.....	60	3.0	33.3	0.7	0.7	0.5
25	Truck, 6-ton, 6x6, prime mover.....	75	2.0	50.0	0.8	0.7	0.5
26	Truck, 7 1/2-ton, 6x6, prime mover.....	160	2.5	40.0	0.5	0.8	0.5
27	Truck, heavy wrecker, 10-ton, M1A1.....	100	2.5	40.0	1.6	0.7	0.5
28	Truck, Tlr, 40-ton, tank, transporter, M25.....	120	1.6	62.5	1.5	0.7	0.5
29	Tractor, medium, high speed, M5.....	110	2.0	50.0	1.0	1.1	0.5
30	Tractor, heavy, high speed, M6.....	300	0.5	200.0	2.0	1.8	0.5
31	Vehicle, landing, tracked.....	110	0.5	200.0	10.0	(⁵)	(⁵)

¹ Includes Vehicle, Armd Utility T41.² Includes:

Carrier, personnel, half-track M2,
M2A1, M3, M3A1, M3A2, M5, M5A1,
M9A1.
Carriage multiple gun (AA) M13,
M14, M15, M15A1, M16, M17.
Carriage 75-mm gun, M3, M3A1.
Carrier 81-mm mortar, M4, M4A1,
M21.

³ Includes:

Tank, light, M5, M5A1, M24.

⁴ Includes:

Tank, medium, M4 (76-mm & 105-mm How), M4A1, M4A2, M4A3 (76-mm & 105-mm How), M4A4, Tk recovery vehicle M32.

⁵ Information not available.

b. Planning weights:

(1) For planning purposes weight of gasoline may be taken as 40 pounds per 5 gallon drum.

(2) For planning purposes weight of engine oil for motors may be taken as 10 pounds per gallon.

314. BASIC DATA—CLASS III SUPPLY (Continued) :

b. Planning weights:

(3) Capacity of cargo trucks and trailers for carrying 5 gallon gasoline drums (filled) :

1-ton trailer	50
1½-ton truck	75
2½-ton truck	125

c. Weights and volumes of packaged petroleum products:

	1	2	3	4	5	6
1	Product	Container	Weight (pounds)	Actual cubic feet	Mean Cubic feet	Number of packages per long ton
2	100-Octane gasoline	55-gal drums 5-gal cans	363 39.5	9 1	10 1	6.22 56.8
3	87-Octane gasoline	55-gal drums 5-gal cans	377 40	9 1	10 1	6 56
4	80-Octane gasoline	55-gal drums 5-gal cans	382 42.2	9 1	10 1	5.92 53.2
5	Diesel fuel	55-gal drums 5-gal cans	426 45	9 1	10 1	5.25 50
6	Kerosene	55-gal drums 5-gal cans	408 43.8	9 1	10 1	5.48 51
7	Lubricating Oils	55-gal drums 5-gal cans 1-qt cans (12 per case) 1-qt cans (24 per case) 5-qt cans (6 per case)	474 48 34.5 60 75	9 1 .88 1.6 1.63	10 1.1 .88 1.6 1.63	4.73 46.7 65 37.4 29.9
8	Greases	25-lb pail 5-lb cans (6 per case)	29 44	.95 1.1	1.04 1.1	77.3 51

	1	2	3	4	5	6	7
1	Container	Gallons per ton					
		100-octane gasoline	87-octane gasoline	80-octane gasoline	Diesel	Kerosene	Lubricating oil
2	Bulk	380	375	367	316	332	280
3	55-gal drums	327	318	314	278	290	250
4	5-gal cans	284	280	270	250	260	234

■ 315. ESTIMATING GASOLINE REQUIREMENTS.--The three factors controlling gasoline requirements of motor vehicles in military operation are:

a. The distance that the organization is to move. By measuring the distance that the center of mass is displaced it can be found how many miles each vehicle in the organization will have to move. From experience tables obtain a figure which is the number of gallons required to move every vehicle in the organization the number of miles required.

b. In addition to those moving the organization, certain vehicles will have to go to supply points. Since these vehicles may have to make the round trip from the farthest location of the organization to several supply points, next measure the round trip distance from each supply point and take the *average*. It has been found that only two-tenths of the vehicles will make this average round trip supply distance, so by multiplying the distance thus obtained by the number of gallons required to move every vehicle in the organization and taking two-tenths of the result, the estimated requirements of supply vehicles will be obtained.

c. In addition to the above there will be movement of vehicles within the bivouac areas, on reconnaissance, warming up engines and abnormal periods of low-gear operation. These items will differ with the character of the operation, weather, roads, and terrain, and must be estimated in accordance with actual conditions. Under average conditions sufficient gasoline to move every vehicle in the organization ten miles will cover these variables for purposes of estimating requirements.

d. *Example:*

It requires 10,000 gallons to move every vehicle in an organization one hundred miles, or 100 gallons for one mile. The center of mass will displace 50 miles, and the average round trip supply distance is 150 miles.

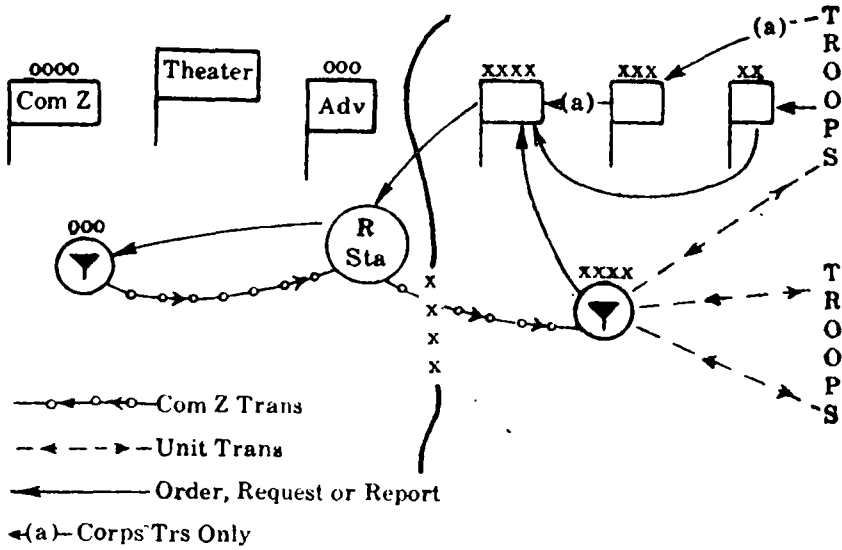
To estimate requirements for this operation take following steps:

- | | |
|---|---------|
| (1) Multiply 50 (distance moved) by 100 (gallons per mile)..... | = 5,000 |
| (2) Multiply 150 (supply distance) by 100
(gallons per mile)..... | =15,000 |
| (3) Take two-tenths of this | 3,000 |
| (4) Multiply 10 by 100 to take care of items mentioned in.
Par 315 c above | 1,000 |

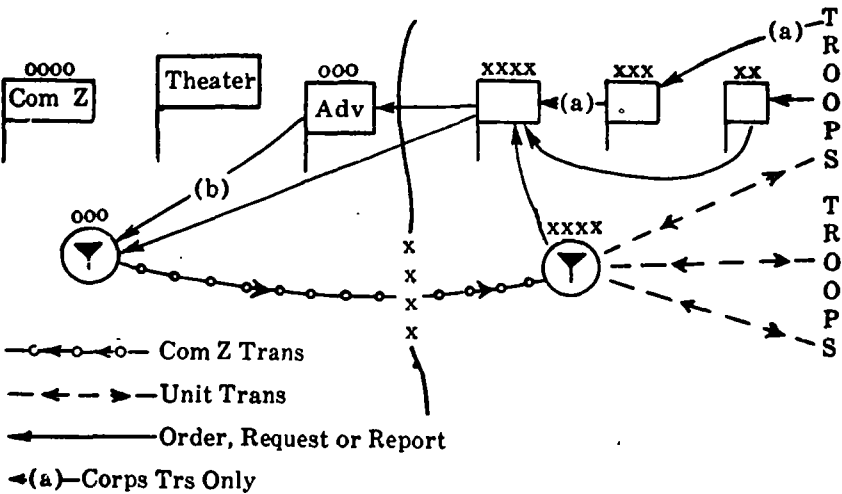
The estimate will be the sum of these three factors9,000 gallons

■ 316. DIAGRAM OF REQUISITION AND DISTRIBUTION OF CLASS III SUPPLIES:

a. A method of supply when a regulating station is used:

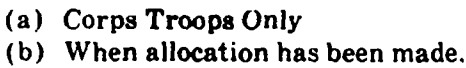


b. A method of supply when no regulating station is used:



¹ If Communication Zone transportation is unable to place supplies in Army Supply Points within reach of using troops, then Army, using its own transportation will establish advance supply points.

a. A method of supply when a regulating station is used:

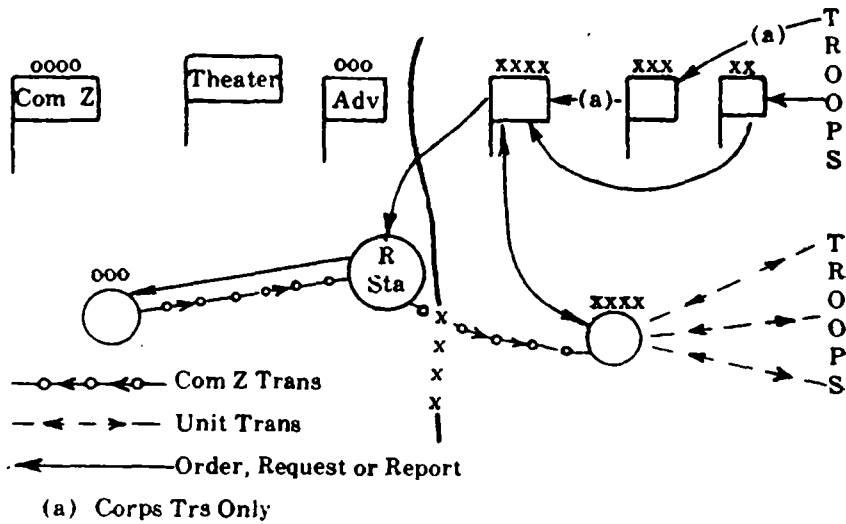


(a) Corps Trs Only
(b) When allocation has been made.

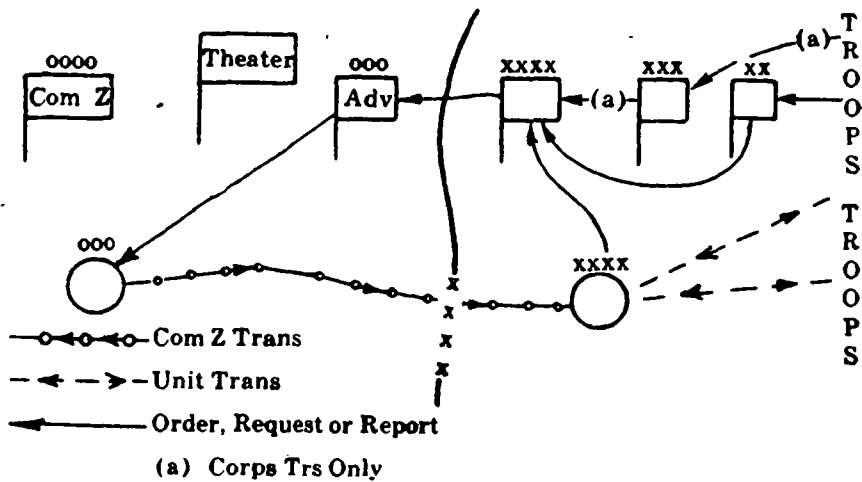
CHAPTER 3—PAGE 21

■ 318. DIAGRAM OF REQUISITION AND SHIPMENT OF CLASS II AND CLASS IV SUPPLIES (Not controlled)

a. A method of supply when a regulating station is used:



b. A method of supply when no regulating station is used:



¹ If Communication Zone transportation is unable to place supplies in Army Supply Points within reach of using troops, then Army, using its own transportation will establish advance supply points.

■ 319. CLASS V SUPPLY.—*a.* The *day of supply*¹ for ammunition (other than aircraft) is the estimated average expenditure per day in a campaign expressed in rounds per weapon per day for all weapons (in the hands of troops) in the theater. It is the unit of measure used by the War Department in establishing theater reserves, in supplying theaters, and in procurement.

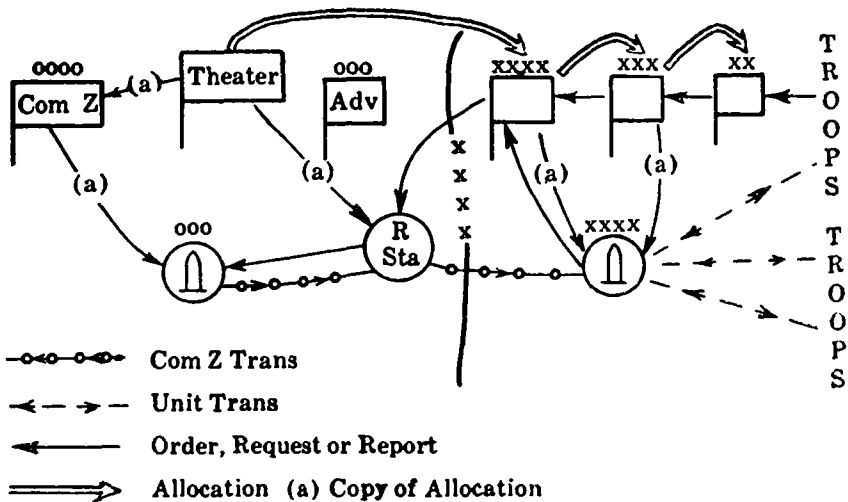
b. The *unit of fire*² is a unit of measure for ammunition supply within a theater from a tactical point of view, based upon experience in the theater. It represents a specified number of rounds per weapon, which varies with the types and calibers of the weapons. The *unit of fire* is not synonymous with the term “day of supply.” The *unit of fire* prescribed by the War Department may be modified by theater commanders as necessary for each individual theater. (See FM 100-10, Par 1.)

¹ The term *day of supply* is used for planning purposes on higher levels and pertains to any or all classes of supply.

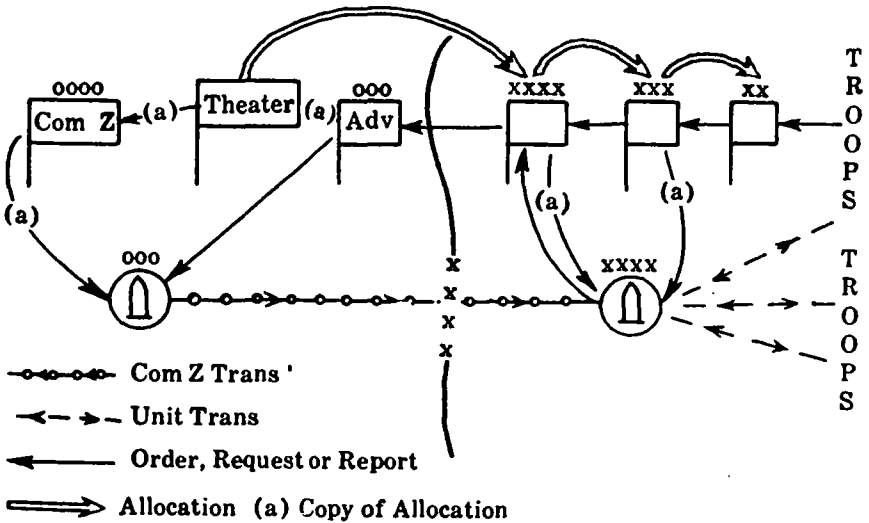
² The term *unit of fire* is used for tactical operations. It includes fixed quantities of ammunition for each type of weapon. Since these quantities may vary for each weapon, the use of the term eliminates the necessity for reference to specific numbers or rounds for each type weapon except in requisitions.

■ 320. DIAGRAM OF DISTRIBUTION OF CLASS V SUPPLIES:

a. A method of supply when a regulating station is used:

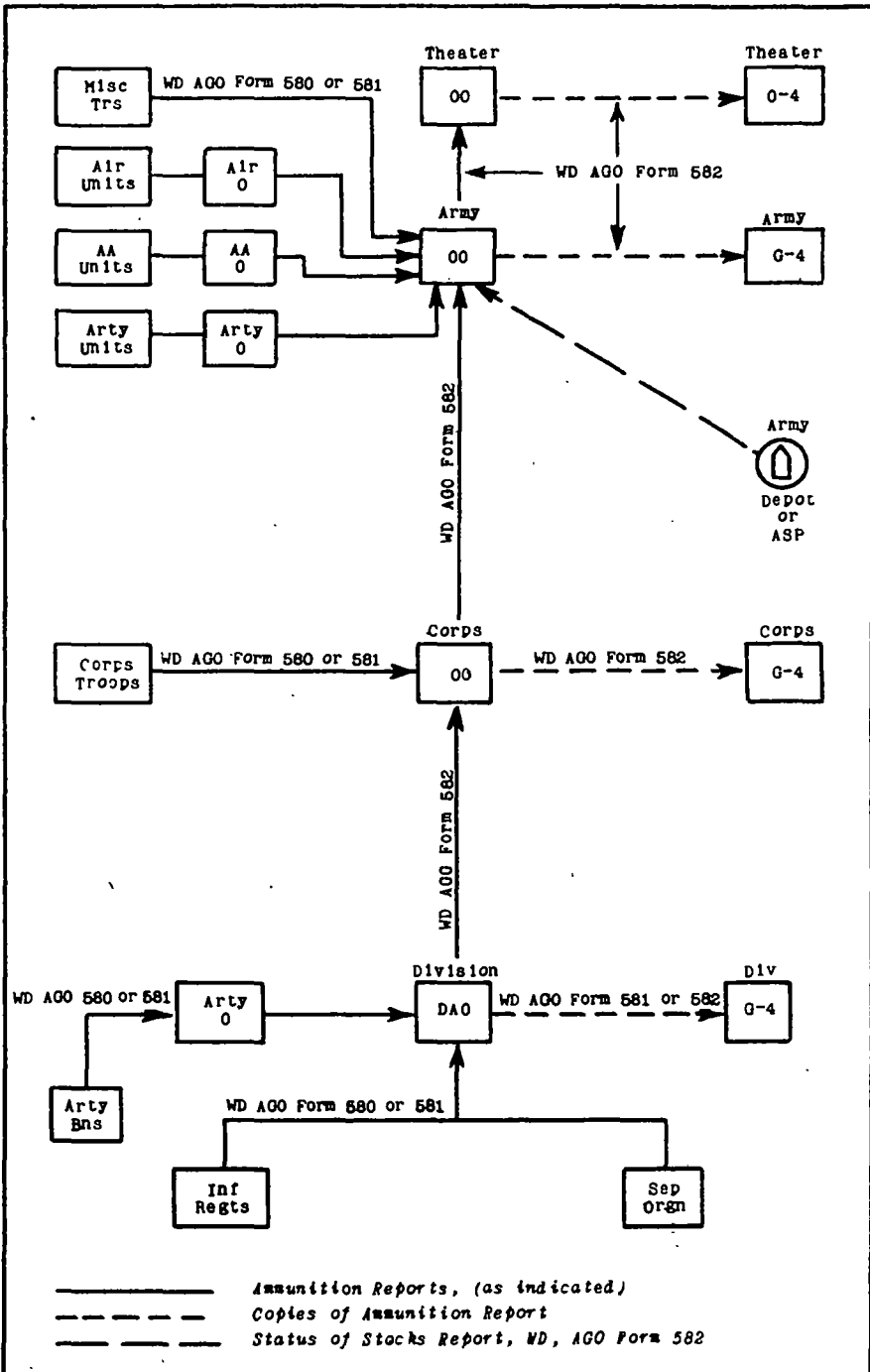


b. A method of supply when no regulating station is used:



¹ If Communication Zone transportation is unable to place supplies in Army Supply Points within reach of using troops, then Army, using its own transportation will establish advance supply points.

■ 321. DIAGRAM OF FLOW OF AMMUNITION REPORTS:



■ 322. a. Basic Data—Ammunition—(Except Aircraft and Chemical Ammunition) (Continued) :

	1	2	3	4	5	6	7	8
1	Weapon	Day of Supply (Rounds per weapon per day)	Proportion of Types	Unit of Fire (Rounds per weapon)	Container ¹		Average weight per round incl. packing (pounds) ¹	
					Rounds ¹	Gross Weight (pounds) ¹	Overseas Shipment	Combat Zone
2	.30 caliber carbine, M1.....	1.5	100% Ball	60	2,700	91	0.033	0.033
3	.30 caliber gun, machine (L and Hv).....	70	80% AP 20% Tracer	2,000	1,000	77	0.077	0.077
4	.30 caliber rifle, automatic, M1918A2.....	30	80% AP 20% Tracer	750	1,500	113	0.075	0.075
5	.30 caliber rifle, M1; M1C.....	3	80% AP 20% Tracer	150	1,200	103	0.086	0.086
6	.45 caliber gun, submachine.....	6	100% Ball	200	2,000	110	0.055	0.055
7	.45 caliber pistol, automatic.....	0.2	100% Ball	10				
8	.50 caliber gun, antiaircraft, M2, water cooled.....	25	80% API 20% Tracer	1,200	265	97.4	0.37	0.37
9	.50 caliber gun, machine (HB).....	25	80% API 20% Tracer	500				
10	20-mm gun, machine, antiaircraft.....	(*)	(*)	540	120	103	0.86	0.86
11	37-mm gun, antiaircraft.....	8	90% HE 10% APC	300	20	85	4.25	4.25

322. a. Basic Data—Ammunition—(Except Aircraft and Chemical Ammunition) (Continued):

	1	2	3	4	5	6	7	8
12	37-mm gun, antitank, M3A1.....	5	25% HE 40% APC 35% Cannister	100	20	100	5	5
13	37-mm gun, tank, M6 (combat vehicles)....	5	25% HE 40% APC 35% Cannister					
14	40-mm gun, all types.....	8	90% HE 10% AP	300	24	158	6.6	6.6
15	Mortar, 2-inch, tank, M3.....	1	100% Smoke	15 *	18	45	2.5	2.5
16	57-mm gun, antitank.....	5	15% HE 70% APC 15% Cannister	100	3	63	21.0	17.0
17	60-mm mortar.....	7.5	80% HE 5% Illum. 15% Smoke WP	100	18	104	5.8	4.5
18	75-mm gun, antitank.....	6	25% HE (Super) 75% APC	50	3	84	28	24
19	75-mm gun, field.....	(*)	(*)	300				
20	75-mm gun, tank.....	5	50% HE (Super) 10% HE (Normal) 30% APC 4% Smoke HC 6% Smoke WP	100	3	84	28	24

322. a. Basic Data—Ammunition—(Except Aircraft and Chemical Ammunition) (Continued):

1	2	3	4	5	6	7	8
	Day of Supply (Rounds per weapon per day)	Proportion of Types	Unit of Fire (Rounds per weapon)	Container ¹		Average weight per round incl. packing (pounds) ¹	
				Rounds ¹	Gross Weight (pounds) ¹	Overseas Shipment	Combat Zone
21	75-mm howitzer, pack.....	25	80% HE 5% HE-AT 4% Smoke HC 6% Smoke WP 5% H	300	3	75	25
22	75-mm howitzer, SP and LVT.....	15	85% HE 4% Smoke HC 6% Smoke WP 5% HE, AT				
23	76-mm gun, antitank.....	6	54% HE (Normal) 15% HE (Reduced) 23% APC 3% Smoke HC 5% Smoke WP	(2)	3	105	35
24	76-mm gun, tank.....	10	45% HE (Normal) 10% HE (Reduced) 35% APC 4% Smoke HC 6% Smoke WP				

322. a. Basic Data—Ammunition—(Except Aircraft and Chemical Ammunition) (Continued):

	1	2	3	4	5	6	7	8
25	3" gun, antiaircraft, mobile.....	5	95% HE 5% APC	150	4	156	39	39
26	3" gun, antitank, wheeled and self-propelled mount.....	6	54% HE (Normal) 15% HE (Reduced) 23% APC 3% Smoke HC 5% Smoke WP	75				
27	81-mm mortar (Incl combat vehicles).....	8	25% HE (L) 65% HE (Hv) 10% Smoke WP	100 (70% L 30% Hv)	L 6 Hv 3 WP 3	73 71 60	12.2 39.7 20.0	9.7 19.0 15.0
28	90-mm gun, antiaircraft, mobile and and AMTB.....	4	85% HE 15% APC	125	2	129	64.5	64.5
29	90-mm gun, SP.....	15	60% HE 30% APC 4% Smoke HC 6% Smoke WP					
30	105-mm howitzer (M2A1 & M4) field and self-propelled mount.....	20	80% HE 5% HE-AT 4% Smoke HC 6% Smoke WP 5% H	200	3	171	57	49
31	105-mm howitzer, M3 (infantry).....	10	80% HE 10% HE-AT 2% Smoke HC 8% Smoke WP	200	3	170	57	49
32	4.2" chemical mortar.....	10	60% HE 40% WP	60	2	65	32.5	32.5

322. a. Basic Data—Ammunition—(Except Aircraft and Chemical Ammunition) (Continued):

	1	2	3	4	5	6	7	8
	Weapon	Day of Supply (Rounds per weapon per day)	Proportion of Types	Unit of Fire (Rounds per weapon)	Container ¹		Average weight per round incl. packing (pounds) ¹	
					Rounds ¹	Gross Weight (pounds) ¹	Overseas Shipment	Combat Zone
33	4.5" gun, M1.....	25	100% HE	175	1	55	75 ⁴	68
34	Charge, Prop., 4.5" gun.....	25	60% Super 40% Normal		3	61		
35	120-mm gun, antiaircraft.....	5	100% HE	90	2	130	143	143
36	Charge, Prop (in case, cartridge, M24)....	5	100% Normal		2	156		
37	155-mm gun, M1917-18, M1, M1A1 & SP.....	20	90% HE 5% H 2% Smoke HC 3% Smoke WP	100	1	95	148.6 ⁴	137
38	Charge, Prop., 155-mm gun, M1.....	20	100% Normal		3	161		
39	155-mm howitzer, field, M1.....	10	85% HE 4% Smoke HC 6% Smoke WP 5% H	150	1	96	122.3 ⁴	115
40	Charge, Prop., 155-mm howitzer, M1....	10	60% WB 40% GB		3	79		
41	155-mm howitzer, field, M1917-18.....	10	85% HE 4% Smoke HC 6% Smoke WP 5% H	150	1	96	112 ⁴	107
42	Charge, Prop., 155-mm howitzer, M1917-18.....	10	60% WB 40% GB		6	95		

322. a. Basic Data—Ammunition—(Except Aircraft and Chemical Ammunition) (Continued):

	1	2	3	4	5	6	7	8
43	8" gun, field.....	10	100% HE	60	1	286	432 *	386
44	Charge, Prop., 8" gun, field.....	10	35% GB 65% WB		1	146		
45	8" howitzer, field.....	10	100% HE	60	1	201	236 *	236
46	Charge, Prop., 8" howitzer, field.....	10	70% WB 30% GB		3	105		
47	240-mm howitzer, field (M1).....	10	100% HE (360-lb.)	60	1	360	465 *	465
48	Charge, Prop., 240-mm (M1).....	10	100% Normal (for 360-lb. shell)		1	105		
49	Grenade, AT, M9A1 per launcher grenade M1, M7, and M8.....	(*)	(*)	6	10	30	3	3
50	Grenade, hand, fragmentation, MK IIA1..	(*)	(*)	50 *	25	53	2.12	2.12
51	Grenade, hand, offensive, MK IIIA2.....	(*)	(*)	(*)	50	54	1.1	1.1
52	Mine, anti-personnel, M2A1.....	(*)	100% HE	(*)	10	93.4	9.34	9.34
53	Mine, anti-personnel, M2A2.....	(*)	100% HE	(*)	10	93.4	9.34	9.34
54	Mine, anti-personnel, M2A3.....	(*)	100% HE	(*)	10	76.6	7.66	7.66
55	Mine, anti-personnel, M3.....	(*)	100% HE	(*)	6	73.2	12.2	12.2
56	Mine, antitank, M1A1.....	(*)	100% HE	(*)	5	73.5	14.7	14.7
57	Mine, antitank, M4.....	(*)	100% HE	(*)	5	69.0	13.8	13.8
58	Mine, antitank, M5.....	(*)	100% HE	(*)	4	88.7	22.2	22.2

322. a. Basic Data—Ammunition—(Except Aircraft and Chemical Ammunition) (Continued):

1	1	2	3	4	5	6	7	8
	Weapon	Day of Supply (Rounds per weapon per day)	Proportion of Types	Unit of Fire (Rounds per weapon)	Container ¹		Average weight per round incl. packing (pounds) ¹	
					Rounds ¹	Gross Weight (pounds) ¹	Overseas Shipment	Combat Zone
59	Mine, antitank, M6.....	(²)	100% HE	(³)	1	30	30	30.0
60	Mine, antitank, M7.....	(²)	100% HE	(³)	8	52	6.5	6.5
61	Rocket, 2.36", M6A1, M6A3 (per launcher, rocket).....	0.20	80% HE 20% Smoke WP	6	20	128	6.4	6.4
62	Rocket, 4.5" T66 (per launcher).....	24	100% HE	144	1	27.5	70	70
63	Torpedo, bangalore (Kit M1A1).....	(²)	.....	(³)	10	168	16.8	16.8

¹ Representative packings are shown. Additional information on the various types of packing may be found in the Army Service Forces Catalogue, Ord SNL's.

² Per rifle Co.

³ Not published.

⁴ Complete Round, including Projectile and Charge.

⁵ For planning purposes only.

LEGEND: APC=Armor Piercing, Capped, AT=Antitank, HE=High Explosive
H=Mustard or other blister gas.

Hv=Heavy, Illum=Illumination, I=Incendiary.

L=Light, SP=Self-Propelled, WP=White Phosphorus.

322 *b. Basic Data, Chemical Warfare Ammunition—For Theater of Operations:*

(1) *For Ground Force Units:*

	1	2	3	4	5	6
1	Items	Day of Supply (Rounds per weapon per day)	Unit of Fire (Rounds per weapon)	Container		Average Weight per round incl packing (pounds)
				Rounds	Gross Weight (pounds)	
2	Grenade, hand, frangible, M-1 (various fillings).....		(1)	12	45-55	3.8-4.6
3	Grenade, hand, irritant, (CN-DM), M6 Per MP Escort Guard Co.....	7.0	15	25	52	2.1
4	Grenade, hand, smoke, (WP), M15					
5	Per Armd Force C vehicle, H-t M2 and M3.....	0.2	2	25	73	3
6	Per Armd Force Mtrcl and ¼-ton Trk.....	0.1	1			
7	Per Mech Cav C vehicle & ¼-ton Trk.....	0.2	2			
8	Per TD Mtr vehicle except Mtrcl and 2½- ton Trk.....	0.2	2			
9	Per Engr C Co; H Cav Rcn Tr; H Cav Wpn Tr Engr C Tr; Co, Armd Engr Bn.....	1.0	10			
	Per Inf Co.....	2.0	20			
10	Grenade, hand, tear (CN), M7 Per MP Escort Guard Co: MP Co Z of I Bn: MP Co, Z of I Sep.....	7.0	15	25	50	2
11	Grenade, incendiary, AN-M14					
12	Per Engr C Co; Engr C Tr; Co, Armd Engr Bn.....	1.0	10			
13	Per Inf Regt (except Pchrt) when Auth.....	20.0	200	25	75	3
	Per Inf Pchrt Regt.....	40.0	400			

322 b. Basic Data, Chemical Warfare Ammunition—For Theater of Operations:

(1) For Ground Force Units (Continued):

1	1	2	3	4	5	6
	Items	Day of Supply (Rounds per weapon per day)	Unit of Fire (Rounds per weapon)	Container		Average Weight per round incl packing (pounds)
				Rounds	Gross Weight (pounds)	
	Grenade, smoke, colored, M16 or M18 (red, green, yellow, violet)					
14	Per Inf Rifle Co (assorted colors).....	0.7	7	25	50	2
15	Per Inf Bn Hq (assorted colors).....	1.5	15			
16	Per Cav Tr, Horse (assorted colors).....	0.5	5			
17	Per Cav Tr, Mecz (assorted colors).....	1.0	10			
18	Per Armd F and TD C vehicle (including towed guns) (assorted colors).....	0.2	2			
19	Per FA Btry (assorted colors).....	1.0	10			
20	Per FA Hq Btry (assorted colors).....	1.5	15			
	Grenade, smoke, white (HC) AN-M8					
21	Per Inf Co.....	0.5	10			
22	Per MP Co, Z of I Bn; MP Co, Z of I Sep.....	7.0	15	25	60	2.4
	Mine, land, chemical, 1 gallon, with burster and detonator.					
23	Per Engr C Co; Co, Armd Engr Bn.....	1.0	10	10	35	3.5 ¹
24	Per Cml Wpns Co.....	10.0	100			
	Pot, smoke, (HC), M1 (with Squibb, electric)					
25	Per MP Co, Z of I Bn; MP Co, Z of I Sep.....	1.0	10	3	50	17
26	Per Cml Smoke Generator Co.....	60	600			
	Pot, smoke, floating, HC, M4					
27	Per Cml Smoke Generator Co.....	30	300	1	56	56
	Shell, 4.2-inch Cml Mort					
28	Per Cml Mort (percentage by type varies with Theater and strategic situation).....	10	60	2	65	32.5

¹ As authorized.² Shipped empty, filled just before using.

322. *b. Basic Data, Chemical Warfare Ammunition—For Theater of Operations:*

(2) *For Special Purposes (CWS Am Listed Below is Distributed for Special Purposes as Indicated):*

- (a) Grenade, Frangible, M1
(3 types fillings). As needed in specific theaters
- (b) Grenade, incendiary, AN-M14
 - 2 per Tac Acft other than Bomb
 - 6 per Bomb Acft
 - 3 per Cml Mort, 4.2 inch
 - 30 per Cml Lab Co; Cml Proc Co, T of Opns
 - 45 per Cml Wpns Co; Cml Proc Co, Z I
 - 90 per Cml Maint Co
 - 900 per Cml Dep Co
 - 3 per Engr Mtr Veh
 - 3 per Sig Mtr Veh
- (c) Grenade, Smoke, Red, AN-M3
 - 1 per Acft except training Acft
- (d) Grenade, Smoke, White (HC), AN-M8
 - 1 per Acft except training Acft
- (e) Incendiary, Safe Destroying, M1 (as required for special purposes).

■ 323. ESTIMATED DAILY REQUIREMENTS OF AMMUNITION FOR VARIOUS TYPES OF COMBAT EXPRESSED IN UNITS OF FIRE PER DAY OF COMBAT: ¹

	1	2	3	4	5	6	7	8	9	10
	Type of Combat	Artillery			Inf Am	AAA ²		4.2" Chem Mort	AT	
		75-mm 105-mm How	155-mm How	155-mm Gun and larger		37-mm 40-mm cal .50 & SA	120- mm & 90-mm Gun		37-mm 57-mm and 75-mm Gun	3" Gun
2	Attack of position:									
3	Permanent fortifications:									
4	First day.....	2.0	2.0	2.0	1.0	0.5	0.5	2.0	1.0	3.0
5	Succeeding days..	1.0	1.0	1.0	0.5	0.3	0.3	1.0	0.5	1.0
6	Deliberately organized:									
7	First day.....	1.5	1.5	1.5	1.0	0.5	0.5	2.0	1.0	1.0
8	Succeeding days..	0.8	0.8	0.8	0.5	0.3	0.3	1.0	0.5	0.5
9	Hastily organized...	0.8	0.5	0.5	0.5	0.5	0.5	1.5	0.8	0.5
10	Covering and security force action.....	0.3	0.2	0.0	0.3	0.1	0.1	3.0	0.5	0.5
11	Defense of position:									
12	First day.....	2.0	2.0	2.0	1.5	0.5	0.5	3.0	2.0	2.0
13	Succeeding days..	1.0	1.0	1.0	1.0	0.5	0.5	1.5	1.0	1.0
14	Inactive situation ³	0.1	0.1	0.1	0.2	0.1	0.1	0.25	0.5	0.5
15	Meeting engagement	0.5	0.5	0.3	0.5	0.2	0.1	2.0	1.0	1.0
16	Pursuit.....	0.5	0.5	0.0	0.3	0.1	0.1	1.0	0.5	0.5
17	Retirement or delaying action.....	1.0	0.5	0.0	0.2	0.3	0.2	3.0	0.5	0.5

¹ Not applicable to Armd Divs. See Par 330.

² When used only on AA missions.

³ Force in contact but neither side attacking.

■ 324. FIELD ARTILLERY AMMUNITION EXPENDITURES:

a. Expressed in Rounds per Weapon per Hour: ¹

	1	2	3	4	5	6
1	Kind of fire or phase of action	Average rate per gun per hour				
		75-mm howitzer	105-mm howitzer	155-mm howitzer	155-mm gun	240-mm howitzer
2	Advance guard action, development, and deployment.....	25	25	12		
3	Preparation.....	85	80	25	25	5
	Supporting fires during the attack (including counterbattery):					
4	First 2 hours.....	70	50	25	25	5
5	After 2 hours.....	40	30	15	15	5
6	Exploitation, pursuit, delaying action, or delaying enemy development.....	25	25	12	12	5
7	Counterpreparation.....	85	60	25	25	5
8	Defensive fires against infantry attack (including counterbattery).....	70	50	25	25	5

¹ These figures are suitable for computing expenditures for periods of time less than 6 hours.

b. Expressed in Tons per Battalion per Hour:

	1	2	3	4	5	6
1	Kind of fire or phase of action	Average tonnage per battalion per hour				
		75-mm howitzer	105-mm howitzer	155 mm howitzer	155-mm gun	240-mm howitzer
2	Advance guard action, development, and deployment.....	3.30	7.35	8.28		
3	Preparation.....	11.22	23.52	17.25	20.55	6.98
	Supporting fires during the attack (including counterbattery):					
4	First 2 hours.....	9.24	14.70	17.25	20.55	6.98
5	After 2 hours.....	5.28	8.82	10.35	12.33	6.98
6	Exploitation, pursuit, delaying action, or delaying enemy development.....	3.30	7.35	8.28	9.86	6.98
7	Counterpreparation.....	11.22	17.64	17.25	20.55	6.98
8	Defensive fires against infantry attack (including counterbattery).....	9.24	14.70	17.25	20.55	6.98

SECTION II

AIRBORNE DIVISION

■ 325. SUPPLY OF AN AIRBORNE DIVISION:

a. Initial resupply of an Airborne Division will ordinarily be accomplished by means of parachute and glider under Air Force control assisted by the Airborne Division. During this stage the supplies should be delivered to the departure airfields by Army or Task Force agencies as requested by the Airborne Division, and responsibility for the packaging, loading, lashing and delivery of these resupplies to Airborne troops in the combat area devolves upon the Air Force Service Command. Through Air Cargo Resupply organization, activated for this purpose, it cares for resupply of Airborne units from arrival of supplies on departure airfields until they are dropped or landed in the forward areas. Rear echelon personnel of the Airborne Division should be trained to properly pack parachute delivery units and to load and lash supplies in gliders and transport airplanes. Sufficient gliders or airplanes must be allotted to Division supply agencies to insure that the combat echelon will be properly supplied. In planning to drop supplies by parachute, it must be remembered that this is an uneconomical method of supply and should be used only in emergencies.

b. Division supply installations should be moved from the departure airfields to the combat area as soon as practicable. This movement will usually occur as soon as an airfield suitable for landing transport airplanes is captured and reasonably secured. Air Service Command personnel must therefore be trained in the proper handling of air transported supplies, in order to accomplish the delivery of supplies forward.

c. Supplies should be moved into the combat area, by air in the same serials as the troops, as soon as possible due to the fact that air advantage may be lost or the weather may become unfavorable and thus render further air movement impracticable. Some supply means should be held in reserve to take care of unexpected contingencies.

d. Plans for the establishment of ground supply for the Airborne Division, as a result of the advance of reinforcing or relieving ground units, must be prepared initially and every effort made to put the plan into effect as soon as possible. In this connection it should be remembered that the Airborne Division has an extremely limited number of trucks and trailers available for supply purposes and proper provision for additional motor transportation should be allotted by Army or Task Force.

e. For further details regarding supply by air see FM 31-40.

■ 326. PRESCRIBED LOADS: (Quartermaster Company—Airborne Division).

- | | | |
|------------------------------------|---|---|
| a. Cargo capacity (202 tons) ----- | } | 35 1/4-ton trucks ¹
50 2 1/2-ton trucks
30 1/4-ton trailers
49 1-ton trailers |
|------------------------------------|---|---|
- b. Items of prescribed load:

All loads prescribed by Division Commander.

Airborne troops will be equipped for the task they expect to perform and can normally expect relief within three days. Early shortages will occur in Artillery, Mortar, and Antiaircraft Ammunition.

¹ 1/4-ton Trk has 800 lb. total payload capacity. Allowing 200 lbs for driver and his equipment, the net payload is 600 lbs per Trk.

■ 327. GAS AND OIL SUPPLY—AIRBORNE DIVISION:

a. *The vehicles assigned organically* to an Airborne Division are for administration, command, and supply, and are not intended for nor are they sufficient to transport the combat elements of the division.

b. During combat and preparation therefor, the number of vehicles used, their loads, and the Class III supplies carried therein, are a command decision. There is no standard prescribed requirement for a standard operation. To arrive at a planning figure for requirements, determine the number of each type of vehicle in the possession of all units of the division, both assigned and attached, and refer to capacities of such vehicles as given in Par 314.

c. For movement of this division, and for support during training and combat, it is customary to attach Quartermaster Truck Units in sufficient strength to provide necessary transport.

■ 328. LOADS OF AMMUNITION FOR COMBAT ECHELON AIRBORNE DIVISION:

a. *Glider Units.*

1	2	3	4	5	6	7	8	9
1 Weapon	Number of rounds per weapon and how carried							
	On individual armed	On individuals of platoon of crew served weapons	On primomovers or handcars	On other vehicles of combat echelon	Total	Remarks		
						Armor-piercing %	Ball %	Tracer %
2 Carbine, U.S., cal .30, M-1	90 ¹			15	105		100	
3 Gun, machine, cal .30, heavy		4,000 ¹	5,000 ²	45 (Engr Bn)	135 (Engr Bn)			
4 Gun, machine, cal .30, light		4,500 ¹	3,000 ²	2,000	11,000	80		20
5 Gun, machine, cal .50, AA			3,000		9,500	80		20
6 Gun, 57-mm, AT		70 (Inf) ¹		10	3,000	80		20
			100 (FA & AA Bns)		80 (Inf)	90		10
			80 (Engr Bn)		100 (FA & AA Bns)	90		10
7 Howitzer, 75-mm, pack			120		80 (Engr Bn)	90		10
					120		77.5 HE	
							2.5 HE	
							AT	
							10 WP	
							10 HS	
8 Mines, antitank				As Atzd	As Atzd			
9 Mortar, 60-mm		48 ¹	18 ²	4	70		100 HE	
							(Illuminating as ordered)	
10 Mortar, 81-mm		18 light ¹	12 heavy ²	6 light	12 heavy		100 HE	
			66 light ²		90 light		(WP as ordered)	
11 Pistol, cal .45	21				21		100	
12 Rifle, automatic, cal .30	100 ²	120	200 ²		420	80		20
		assistant auto-rifleman						
13 Rifle, cal .30, M-1	176 ^{1 4}		8 ²	8	192	80		20
14 Rifle, cal .30, M'03	160 ^{1 4}				160	80		20

328. LOADS OF AMMUNITION FOR COMBAT ECHELON AIRBORNE DIVISION:

a. *Glider Units (Continued)*:

	1	2	3	4	5	6	7	8	9
1	Weapon	Number of rounds per weapon and how carried							
		On individual armec	On individ vals of platoon of crew served weapons	On prime- movers or handcarts	On other vehicles of combat echelon	Total	Remarks		
							Armor- piercing %	Ball %	Tracer %
15	Submachine gun, cal .45.....	300			690	990		80	20
16	Grenades, AT, per launcher, cal .30.....	10			20 (Engr Bn)	10			
17	Cartridges, special, blank, M-3.....					30 (Engr Bn)		100 HE	
18	per launcher, cal .30.....	11			22 (Engr Bn)	11			
18	Grenade, hand, fragmentation.....	2 per individual				33 (Engr Bn)		100 HE	
19	Grenade, hand, offensive, Mk-III.....			4 per ¼-ton Trk (Engr Bn)		2 per individual			
						4			
20	Rocket, 2.36-inch.....	10				10		100 HE	

NOTES

- 1 Any part may be dropped to form small company dumps immediately upon landing as prescribed by company or battery commander.
- 2 Carried in hand carts of organization and of Sup Sec of Bn Hq Co.
- 3 100 by each automatic rifleman, 120 by assistant automatic rifleman (in 20-round containers)
- 4 Caliber .30 ammunition is packed and issued as follows:
 - Carbine, packed in 50-round cartons.
 - Machine gun, in 250-round belts of 1 round tracer to each 4 rounds of ball or AP.
 - Rifle M-1, in 8-round clips of either ball, tracer, or AP (*but not mixed*). Issued in 48-round bandoleers.
 - Rifle M-1903, in 5-round clips of either ball, tracer or AP (*but not mixed*) Issued in 60-round bandoleers.

328. LOADS OF AMMUNITION FOR COMBAT ECHELON AIRBORNE DIVISION:

b. Parachute Units:

<i>Weapon</i>	<i>On individual armed</i>	<i>Dropped in squad</i>	<i>Dropped in cargo containers</i>	<i>On combat trains</i>
Carbine, U.S., cal .30, M-1.....	60 45 (Engr Bn)	60 (squad container)		60
Gun, machine, .30 cal, light.....		1,000	1,000	
Gun, machine, .50 cal, AA.....		1,600		
Gun, 57-mm, AT.....		100		
Howitzer, 75-mm, pack.....		120 (In caisson T-8 & ADC 5)		
Mines, antitank, HE, M-1.....		Not normally carried but for special situations may be dropped in containers No. 10		
Mortar, 60-mm.....		18	36	108
Mortar, 81-mm.....		18	36	
Pistol, cal .45.....	21	14 (squad container)		
Rifle, cal .30, M-1.....		144	144	
Rifle, cal .30, M-1903.....	40		120 (Engr Bn)	
Submachine gun, cal .45.....		300	600	
Grenade, AT, M-9 per launcher, cal .30.....		10		
Cartridge, special, blank, M-3 per launcher, cal .30.....	11			
Grenade, hand, offensive.....	4 per jumper			
Rocket, 2.36-inch.....		8		



SECTION III

ARMORED DIVISION

329. GAS AND OIL SUPPLY DATA—ARMORED DIVISION: 1 2 3 4

1	2	3.	4	5	6	7	8
Unit	Fuel and Lubricant Requirements—Motor Vehicles						
	Consumption in moving unit -100 miles				Gallons to fill tanks		
	Vehicle fuel (gallons) (¹)	Engine oil (gallons)	Gear lube (pounds)	Grease, miscel- laneous (pounds)	Vehicle tanks	Cans, 5-gallon	Total
2 Div Hq & Hq Co.....	742	36.9	16.5	24.6	1,573	610	2,183
3 2 Hq & Hq Cos C. C. (ea).....	498	26.3	8.6	15.3	980	380	1,360
4 Armd Sig Co.....	965	31.6	28.4	31.4	2,310	895	3,205
5 Cav Rcn Sq.....	4,327	279.4	95.5	151.6	10,473	4,870	15,343
6 Hq & Sv Tr, Rcn Sq ³	(526)	(24.9)	(23.2)	(17.5)	(1,466)	(3,820)	(5,286)
7 4 Rcn Trs, Rcn Sq (ea).....	(409)	(27.6)	(15.5)	(20.5)	(1,333)	(250)	(1,583)
8 Aslt Gun Tr, Rcn Sq.....	(898)	(53.6)	(8.3)	(24.7)	(1,590)	(25)	(1,615)
9 L Tk Co, Rcn Sq.....	(1,267)	(90.5)	(2.0)	(27.4)	(2,085)	(25)	(2,110)
10 3 Tank Bns (ea).....	9,854	788.0	55.3	205.0	15,510	11,260	26,770
11 Hq & Hq Co, Tk Bn ³	(1,072)	(71.3)	(17.8)	(28.9)	(1,860)	(125)	(1,985)
12 3 Tank Cos (M), Tk Bn (ea).....	(2,304)	(200.1)	(2.0)	(45.1)	(3,280)	(30)	(3,310)
13 Tank Co (L) Tk Bn.....	(1,267)	(90.5)	(2.0)	(27.4)	(2,085)	(25)	(2,110)
14 Sv Co, Tk Bn.....	(603)	(25.9)	(34.5)	(13.4)	(1,725)	(11,020)	(12,745)
15 3 Armd Inf Bns (ea).....	3,284	147.5	80.1	112.8	6,680	2,310	8,990
16 Hq & Hq Co, Inf Bn ³	(918)	(52.8)	(15.1)	(27.9)	(1,705)	(115)	(1,820)
17 3 Rifle Cos, Inf Bn (ea).....	(648)	(23.8)	(16.4)	(25.2)	(1,325)	(40)	(1,365)
18 Sv Co, Inf Bn.....	(422)	(23.3)	(15.8)	(9.3)	(1,000)	(2,075)	(3,075)
19 Hq & Hq Btry, Div Arty.....	247	9.5	12.0	6.2	689	325	1,014
20 3 Armd FA Bns (ea).....	4,372	309.6	53.2	105.0	7,508	3,885	11,393
21 Hq & Hq Btry, FA Bn ³	(780)	(47.2)	(12.0)	(21.1)	(1,418)	(130)	(1,548)
22 3 Btrys 105-mm, FA Bn (ea).....	(990)	(74.9)	(6.4)	(23.7)	(1,555)	(35)	(1,590)
23 Sv Btry, FA Bn.....	(622)	(37.7)	(22.0)	(12.8)	(1,425)	(3,650)	(5,075)
24 Armd Engr Bn.....	1,654	58.3	67.3	42.4	3,955	2,025	6,980
25 Hq & Hq Co, Engr Bn ³	(628)	(20.8)	(25.0)	(13.9)	(1,495)	(1,500)	(2,995)
26 3 Engr Cos, Engr Bn (ea).....	(342)	(12.5)	(14.1)	(9.5)	(820)	(175)	(995)
27 Hq & Hq Co, Armd Div Tns & MP Plat.....	498	17.9	22.4	14.5	1,321	815	2,136
28 Ord Maint Bn.....	2,947	107.2	123.3	54.7	7,520	4,110	11,630
29 Hq & Hq Co, Maint Bn ³	(709)	(29.5)	(39.9)	(16.0)	(2,015)	(3,645)	(5,660)
30 3 Maint Cos, Maint Bn (ea).....	(746)	(25.9)	(27.8)	(12.9)	(1,835)	(155)	(1,990)
31 Armd Med Bn.....	959	30.1	47.1	20.9	2,420	1,360	3,780
32 Hq & Hq Co, Med Bn ³	(194)	(7.6)	(10.5)	(5.0)	(530)	(745)	(1,075)
33 3 Med Cos, Med Bn (ea).....	(255)	(7.5)	(12.2)	(5.3)	(630)	(205)	(835)
34 Armd Div (Total).....	65,865	4,358.8	983.5	1,645.3	122,295	68,135	190,430

329. GAS AND OIL SUPPLY DATA—ARMORED DIVISION (Continued) :

	1	9	10	11	12
1	Unit	Fuel Can Data			Organic Kitchens
		Organic Fuel Cans			
		Ki & Misc	Motor Vehicles	Total	
2	Div 11q & Hq Co.....	10	112	122	2
3	2 11q & Hq Cos C. C. (ea).....	4	72	76	1
4	Armd Sig Co.....	2	177	179	2
5	Cav Ren Sq.....	722	252	974	7
6	11q & Sv Tr, Ren Sq ²	(716)	(48)	(764)	(1)
7	4 Ren Trs, Ren Sq (ea).....	(1)	(49)	(50)	(1)
8	Aslt Gun Tr, Ren Sq.....	(1)	(4)	(5)	(1)
9	L Tk Co, Ren Sq.....	(1)	(4)	(5)	(1)
10	3 Tank Bns (ea).....	2,094	158	2,257	6
11	Hq & Hq Co, Tk Bn ²	(4)	(21)	(25)	(1)
12	3 Tank Cos (M), Tk Bn (ea).....	(2)	(4)	(6)	(1)
13	Tank Co (L) Tk Bn.....	(1)	(4)	(5)	(1)
14	Sv Co, Tk Bn.....	(2,083)	(121)	(2,204)	(1)
15	3 Armd Inf Bns (ea).....	5	457	462	5
16	11q & Hq Co, Inf Bn ²	(1)	(22)	(23)	(1)
17	3 Rifle Cos, Inf Bn (ea).....	(1)	(7)	(8)	(1)
18	Sv Co, Inf Bn.....	(1)	(414)	(415)	(1)
19	11q & 11q Btry, Div Arty.....	30	35	65	1
20	3 Armd FA Bns (ea).....	690	87	777	5
21	11q & 11q Btry, FA Bn ²	(5)	(21)	(26)	(1)
22	3 Btrys 105-mm, FA Bn (ea).....	(2)	(5)	(7)	(1)
23	Sv Btry, FA Bn.....	(679)	(51)	(730)	(1)
24	Armd Engr Bn.....	231	174	405	4
25	Hq & Hq Co, Engr Bn ²	(228)	(72)	(300)	(1)
26	3 Engr Cos, Engr Bn (ea).....	(1)	(34)	(35)	(1)
27	Hq & Hq Co, Armd Div Tns & MP Plat.....	84	79	163	2
28	Ord Maint Bn.....	619	203	822	4
29	Hq & Hq Co, Maint Bn ²	(616)	(113)	(729)	(1)
30	3 Maint Cos, Maint Bn (ea).....	(1)	(30)	(31)	(1)
31	Armd Med Bn.....	126	146	272	4
32	Hq & Hq Co, Med Bn ²	(123)	(26)	(149)	(1)
33	3 Med Cos, Med Bn (ea).....	(1)	(40)	(41)	(1)
34	Armd Div (Total).....	10,199	3,428	13,627	77

¹ In computing gasoline requirements add a 10% safety factor.² Data based on 2,000 mile Field Operation Test. For approximate gasoline consumption under battle and cross-country conditions, multiply results from table above by 2.5 (the 10% safety factor may be omitted in this case).³ Includes Atchd Med.⁴ An average consumption of 2,000 gallons per day (net) should be expected, regardless of marches, to provide fuel for kitchens and gasoline powered accessories.⁵ In computing kitchen requirements separately estimate 15 gallons gasoline per kitchen per day.

■ 330. AMMUNITION SUPPLY—ARMORED DIVISION:

a. Definitions:

- (1) *Refill*.—Ammunition loads prescribed by stowage lists for all vehicles and individuals of battalions and other separate units. Does not include ammunition carried in cargo space of general purpose vehicles allotted for ammunition supply.
- (2) *Resupply Capacity*.—Cargo capacity of general purpose vehicles allotted for ammunition supply.
- (3) *Prescribed Load*.—Refill plus resupply capacity.

b. Estimated Ammunition Expenditures (based on Armored Unit Action in Tunisia):(1) *Expenditures by Type per Day:*

	CANNON					SMALL ARMS & SPECIAL			
	105-mm How	76-mm Gun 105-mm How Tank	76-mm How SP	57-mm AT Gun	37-mm Tk Gun	Small Arms & MIG	Rock- ets	60-mm & 81-mm Mortar	Gre- nades
Refills.....	1.0	0.40	0.20	0.20	0.40	0.10	0.10	0.60	0.50
Units of Fire....	0.73	0.32	0.10	0.06	0.50	0.13	0.17	0.48	.....

(2) *Total Unit Expenditures per Day:*

Tk Bn— 0.30 Refills

Armd FA Bn—0.85 Refills

Armd Inf Bn—0.20 Refills

c. For Units of Fire and Loads Carried see Par 331.

■ 331. AMMUNITION SUPPLY DATA—ARMORED DIVISION:

	1	2	3	4	5	6	7	8	9
1	Type of Ammunition	Unit of Fire		Refill			Prescribed Load		
		Rounds	Tons	Rounds	Tons	Unit of fire	Rounds	Tons	Unit of fire
	ONE TANK BATTALION (3 ea)								
2	.30 Cal Carbine.....	15,420	0.25	19,125	0.32	1.24	23,906	0.39	1.55
3	.30 Cal Rifle & MG.....	343,000	14.23	531,000	22.04	1.55	676,000	28.05	1.97
4	.45 Cal Pistol & SMG.....	89,230	2.45	80,500	2.21	0.90	100,750	2.77	1.12
5	.50 Cal MG.....	52,500	9.71	57,200	10.58	1.09	69,900	12.93	1.33
6	2" Mortar, M3.....		(1)	1,140	1.43		1,810	2.26	
7	75-mm Gun Tk.....	7,000	84.00	5,550	66.60	0.79	8,300	99.60	1.19
8	81-mm Mortar.....	900	5.63	530	3.31	0.59	785	4.90	0.87
9	105-mm How Tk.....	1,200	29.40	626	15.34	0.52	939	23.00	0.78
10	Grenades, Frag M2.....	(1)		558	0.59		558	0.59	
11	Grenades, Smoke.....	(1)		642	0.96		642	0.96	
12	Mines, AT.....	(1)		(2)	(2)		(2)	(2)	
13	Pots, smoke, HC M1.....	(1)		36	0.30		36	0.30	
14	Projector, Signal M4.....	(1)		204	0.13		204	0.13	
15	Rocket, 2.36".....	210	0.67	340	1.09	1.62	425	1.36	2.02
16	SUB TOTAL.....		175.74 *		124.90			177.24	
	ONE ARTILLERY BATTALION (3 ea)								
17	.30 Cal Carbine.....	23,460	0.39	32,500	0.54	1.39	40,250	0.66	1.72
18	.30 Cal MG.....	56,000	2.32	98,000	4.07	1.75	122,500	5.08	2.19
19	.45 Cal Pistol & SMG.....	22,850	0.63	21,000	0.58	0.92	26,200	0.72	1.15
20	.50 Cal MG.....	23,500	4.35	21,500	3.98	0.92	26,900	4.98	1.14
21	2" Mortar, M3.....		(1)	36	0.05		54	0.07	
22	75-mm Gun Tk.....	300	3.60	240	2.88	0.80	360	4.32	1.20
23	81-mm Mortar.....	200	1.25	60	0.38	0.30	90	0.56	0.45
24	105-mm How SP.....	3,600	88.20	2,574	63.06	0.76	3,861	94.59	1.08
25	Grenades Frag M2.....	(1)		292	0.31		292	0.31	
26	Grenades Smoke.....	(1)		340	0.51		340	0.51	
27	Mines, AT.....	(1)		(2)	(2)		(2)	(2)	
28	Pots, Smoke, HC M1.....	(1)		12	0.10		12	0.10	
29	Projector, Signal M4.....	(1)		420	0.28		420	0.28	
30	Rocket, 2.36".....	204	0.65	400	1.28	1.67	500	1.60	2.08
31	SUB TOTAL.....		101.39 *		78.02			113.78	

331. AMMUNITION SUPPLY DATA—ARMORED DIVISION (Continued):

	1	2	3	4	5	6	7	8	9
	ONE INFANTRY BATTALION (3 ea)								
32	.30 Cal Carbine.....	22,560	0.37	29,500	0.49	1.31	36,900	0.61	1.64
33	.30 Cal Rifle & MG.....	213,700	8.87	294,000	12.20	1.38	368,000	15.27	1.72
34	.45 Cal Pistol & SMG.....	27,630	0.76	24,900	0.78	0.90	31,100	0.86	1.13
35	.50 Cal MG.....	23,000	4.26	29,700	5.49	1.29	37,100	6.86	1.62
36	2" Mortar, M3.....	(1)		36	0.05		54	0.07	
37	57-mm Gun AT.....	900	7.65	270	2.30	0.30	405	3.44	0.45
38	60-mm Mortar.....	900	2.03	684	1.54	0.76	1,026	2.31	1.14
39	81-mm Mortar.....	400	2.50	321	2.00	0.80	482	3.01	1.21
40	105-mm How, Tk.....	600	14.70	294	7.20	0.49	440	10.78	0.73
41	Grenades, Frag M2.....	(1)		1,088	1.15		1,088	1.15	
42	Grenades, Smoke.....	(1)		1,035	1.55		1,035	1.55	
43	Mines, AT.....	(1)		(2)	(2)		(2)	(2)	
44	Pots, Smoke, HC M1.....	(1)		6	0.05		6	0.05	
45	Projector, Signal M4.....	(1)		180	0.12		180	0.12	
46	Rocket, 2.36".....	450	1.44	740	2.36	1.64	925	2.96	2.06
47	SUB TOTAL.....		42.58 ³		37.28			49.04	
	CAVALRY RECONNAISSANCE SQUADRON								
48	.30 Cal Carbine.....	32,160	0.53	88,000	1.45	2.73	98,000	1.62	3.41
49	.30 Cal Rifle & MG.....	327,000	13.56	326,000	13.53	0.99	561,000	23.28	1.72
50	.45 Cal Pistol & SMG.....	47,030	1.29	42,000	1.16	0.89	46,000	1.27	0.98
51	.50 Cal MG.....	27,500	5.09	28,400	5.25	1.03	31,000	5.74	1.13
52	37-mm Gun.....	5,200	13.00	4,500	11.25	0.87	5,600	14.00	1.08
53	2" Mortar, M3.....	(1)		259	0.32		390	0.49	
54	60-mm Mortar.....	3,600	8.10	864	1.94	0.24	1,096	2.47	0.36
55	75-mm Gun, Tk.....	1,700	20.40	816	9.79	0.48	1,224	14.69	0.72
56	75-mm How.....	2,400	26.40	1,110	12.21	0.46	1,465	16.12	0.69
57	81-mm Mortar.....	300	1.86	240	1.50	0.80	360	2.25	1.20
58	Grenades, Frag M2.....	(1)		800	0.85		800	0.85	
59	Grenades, AT.....	(1)		4,500	2.98		4,500	2.98	
60	Grenades, Smoke.....	(1)		970	1.46		970	1.46	
61	Mines, AT.....	(1)		(2)	(2)		(2)	(2)	

331. AMMUNITION SUPPLY DATA—ARMORED DIVISION (Continued) :

1	2	3	4	5	6	7	8	9
Type of Ammunition	Unit of Fire		Refill			Prescribed Load		
	Rounds	Tons	Rounds	Tons	Unit of fire	Rounds	Tons	Unit of fire
62 Pots, Smoke, HC M1.....	(1)		226	1.92		226	1.92	
63 Projector Signal, M4.....	(1)		48	0.03		48	0.03	
64 Rocket, 2.36".....	222	0.71	670	2.14	3.02	838	2.68	3.77
65 SUB TOTAL.....		91.69 *		67.74			91.85	
ENGINEER BATTALION								
66 .30 Cal Carbine.....	8,580	0.14	11,470	0.19	1.34	14,350	0.24	1.67
67 .30 Cal Rifle & MG.....	137,650	5.44	162,720	6.75	1.18	203,500	8.45	1.48
68 .45 Cal Pistol & SMG.....	20,630	0.57	18,600	0.51	0.90	23,250	0.64	1.13
69 .50 Cal MG.....	10,000	1.85	8,910	1.65	0.89	11,130	2.06	1.11
70 Grenades, Frag M2.....	(1)		140	0.15		140	0.15	
71 Grenades, Smoke.....	(1)		90	0.14		90	0.14	
72 Mines, AT.....	(1)		(2)	(2)		(2)	(2)	
73 Projector, Signal M4.....	(1)		230	0.15		230	0.15	
74 Rocket, 2.36".....	174	0.56	290	0.93	1.67	362	1.16	2.09
75 SUB TOTAL.....		8.56 *		10.47			12.99	
DIV HQ & HQ CO, HQ & HQ CO CCS, DIV SIG CO, HQ & HQ BTRY DIV ARTY								
76 .30 Cal Carbine.....	37,200	0.61	51,910	0.81	1.32	64,900	1.07	1.68
77 .30 Cal Rifle & MG.....	95,350	3.96	155,000	6.43	1.46	190,000	7.88	1.82
78 .45 Cal Pistol & SMG.....	37,080	1.02	33,849	0.93	0.92	42,400	1.17	1.04
79 .50 Cal MG.....	21,500	3.98	20,600	3.81	0.96	25,200	4.66	1.17
80 37-mm Gun.....	200	0.50	320	0.80	1.60	480	1.20	2.40
81 2" Mortar M3.....	(1)		135	0.17		180	0.23	
82 57-mm Gun.....	300	2.55	90	0.77	0.30	135	1.15	0.45
83 75-mm Gun, Tk.....	900	10.80	400	4.80	0.44	535	6.42	0.59
84 Grenades, Frag M2.....	(1)		440	0.47		440	0.47	
85 Grenades, Smoke.....	(1)		364	0.55		364	0.55	

331. AMMUNITION SUPPLY DATA—ARMORED DIVISION (Continued):

	1	2	3	4	5	6	7	8	9
86	Mines, AT.....	(¹)		(¹)	(¹)		(¹)	(¹)	
87	Pots, Smoke HC M1.....	(¹)		8	0.07		8	0.07	
88	Projector, Signal M4.....	(¹)		90	0.06		90	0.05	
89	Rocket, 2.36".....	456	1.46	600	1.92	1.32	750	2.40	1.64
90	SUB TOTAL.....		24.88 ²		21.59			27.32	
91	DIVISION TNS (Hq & Hq Co Div Trs, Ord Maint Bn and Med Bn, MP Plat)								
92	.30 Cal Carbine.....	38,520	0.64	57,970	0.96	1.50	72,400	1.19	1.88
93	.30 Cal Rifle & MG.....	60,900	2.53	68,480	2.84	1.12	85,500	3.55	1.40
94	.45 Cal Pistol & SMG.....	46,490	1.28	40,870	1.12	0.88	51,000	1.40	1.10
95	.50 Cal MG.....	20,500	3.79	14,520	2.69	0.71	18,160	3.36	0.89
96	Grenade, Frag M2.....	(¹)		158	0.17		158	0.17	
97	Grenade, Smoke.....	(¹)		42	0.06		42	0.06	
98	Mines, M7.....	(¹)		357	1.16		357	1.16	
99	Projector, Signal M4.....	(¹)		360	0.23		360	0.23	
99	Rocket, 2.36".....	240	0.77	400	1.28	1.67	500	1.60	2.09
100	SUB TOTAL.....		9.01 ³		10.51			12.72	
101	TOTAL FOR DIVISION.....		1,093.27 ³		830.95			1,165.06	

¹ Not published.

² As prescribed. Depends on type of mine. See Par 322 for weights and various types of mines.

³ Total does not include weights of items for which no Unit of Fire is published.



SECTION IV

INFANTRY DIVISION

■ 332. QUARTERMASTER COMPANY—INFANTRY DIVISION:

a. Outline of Organization (T/O & E 10-17, 2/19/44, C1):¹

	1	2	3	4	5	6	7
1	Item	Office of Div QM	Quartermaster Company				Aggregate
			Co Hq	Sv Plat	3 Trk Plats (each)	Total Co	
2	Officers.....	4	2	1	1	6	10
3	Enlisted Men.....	14	30	48	28	162	176
4	Including: Laborers.....			(39)		(39)	(39)
5	Aggregate.....	18	32	49	29	168	186
6	Truck, 1/4-ton.....	1	2		1	5	6
7	Truck, 3/4-ton, Wpn Carr.....	1		1		1	2
8	Trucks, 2 1/2-ton, cargo.....	1	2		16	50	51 ¹
9	Trailers, 1-ton, cargo.....	1	1		16	49	50 ¹

¹ 48 2 1/2-ton Trks and 48 1-ton Tlrs are available for general use. All other vehicles are required for company overhead.

b. Prescribed load:

*Truck, 2 1/2-ton &
Trailer, 1-ton*

1. Cargo capacity (168 tons) 48

2. Items of prescribed load:

(1) Class I: Rations (32 tons 10 in 1 Ration) 10

(2) Class III: (Including 4,000 gallons gasoline) 5

(3) Class V: Antitank mines M7, (1,072 cased) 1

Ammunition (As prescribed by Division Commander)

3. Total prescribed load 16

4. Without prescribed load 32

5. Total units (2 1/2-ton truck and 1-ton trailer) 48

■ 333. GAS AND OIL SUPPLY DATA—INFANTRY DIVISION: ^{1 2 3}

1	Unit	2	3	4	5
		Fuel and Lubricant Requirements— Motor Vehicles			
		Consumption in moving unit 100 miles ¹			
		Vehicle fuel (gal)	Engine oil (gal)	Gear lube (lbs)	Grease, miscel- laneous (lbs)
2	Sp Trs, Inf Div.....	2,180	87.1	122.1	53.1
3	Hq & Hq Co, Inf Div.....	(272)	(12.1)	(13.0)	(9.1)
4	MP Plat, Inf Div.....	(165)	(5.8)	(7.0)	(5.4)
5	Ord L Maint Co, Inf Div.....	(395)	(14.5)	(19.3)	(8.3)
6	QM Co, Inf Div.....	(733)	(32.4)	(48.3)	(16.8)
7	Sig Co, Inf Div.....	(615)	(22.3)	(34.5)	(13.5)
8	Cav Rcn Tr, Mecz, Inf Div.....	409	27.6	15.5	20.5
9	3 Inf Regt (ea).....	1,714	69.3	89.3	48.6
10	Hq & Hq Co, Inf Regt.....	(169)	(5.5)	(6.4)	(4.8)
11	Sv Co, Inf Regt.....	(441)	(19.2)	(28.5)	(10.3)
12	Cn Co, Inf Regt.....	(160)	(6.8)	(9.4)	(3.7)
13	Inf AT Co, 57-mm Gun.....	(188)	(7.8)	(10.8)	(4.0)
14	3 Inf Bns (ea).....	(252)	(10.0)	(11.4)	(8.0)
15	Hq & Hq Co, Inf Bn.....	(114)	(4.7)	(5.8)	(3.4)
16	3 Inf R Cos (ea).....	(10)	(0.4)	(0.4)	(0.4)
17	Inf Hv Wpns Co.....	(108)	(4.1)	(4.4)	(4.0)
18	Div Arty.....	4,840	159.4	237.6	95.1
19	Hq & Hq Btry, Div Arty.....	(259)	(8.3)	(13.2)	(5.4)
20	3 FA Bns, 105-mm How (ea).....	(970)	(35.7)	(54.7)	(21.9)
21	Hq & Hq Btry, FA Bns, 105-mm How.....	(261)	(8.0)	(12.3)	(5.9)
22	3 FA Btrys, 105-mm How (ea).....	(163)	(6.2)	(9.5)	(3.7)
23	Sv Btry, FA Bn, 105-mm How.....	(220)	(9.1)	(13.9)	(4.9)
24	FA Bn, 155-mm How.....	(1,671)	(44.0)	(60.3)	(24.0)
25	Hq & Hq Btry, FA Bn, 155-mm How.....	(241)	(7.2)	(11.5)	(5.1)
26	3 FA Btrys, 155-mm How (ea).....	(392)	(9.0)	(11.4)	(4.5)
27	Sv Btry, FA Bn, 155-mm How.....	(254)	(9.8)	(14.6)	(5.4)
28	Engr C Bn.....	1,089	40.1	58.6	22.7
29	Hq & Hq & Sv Co, Engr C Bn.....	(285)	(10.1)	(15.4)	(5.9)
30	3 Engr C Cos (ea).....	(268)	(10.0)	(14.4)	(5.6)
31	Med Bn, Inf Div.....	821	24.9	43.0	15.6
32	Hq & Hq Det, Med Bn.....	(107)	(4.2)	(6.3)	(2.5)
33	3 Coll Cos, Med Bn (ea).....	(198)	(5.2)	(9.7)	(3.5)
34	Clr Co, Med Bn.....	(120)	(5.1)	(7.6)	(2.6)
35	Inf Div (Totals).....	14,481	547.0	744.7	352.8

333. GAS AND OIL SUPPLY DATA—INFANTRY DIVISION (Continued): ^{1 2 3}

	1	6	7	8	9	10	11	12
1	Unit	Gasoline Capacity— Gallons fuel to fill tanks			Fuel Can Data— Organic Fuel Cans ⁴			Org Ki (⁶)
		Vehicle tanks	Cans, 5-gal (All)	Total	Ki & Misc	Motor Ve- hicles	Total	
2	Sp Trs, Inf Div.....	6,202	5,930	12,132	839	347	1,186	7
3	Hq & Hq Co, Inf Div.....	(807)	(375)	(1,182)	(26)	(49)	(75)	(3)
4	MP Plat, Inf Div.....	(465)	(155)	(620)		(31)	(31)	
5	Ord L Maint Co, Inf Div.....	(1,050)	(355)	(1,405)	(11)	(60)	(71)	(1)
6	QM Co, Inf Div.....	(2,190)	(4,565)	(6,755)	(801)	(112)	(913)	(1)
7	Sig Co, Inf Div.....	(1,690)	(480)	(2,170)	(1)	(95)	(96)	(2)
8	Cav Rcn Tr, Mecz, Inf Div.....	1,333	525	1,858	1	104	105	1
9	3 Inf Regt (ea).....	4,930	1,625	6,555	22	303	325	19
10	Hq & Hq Co, Inf Regt.....	(455)	(180)	(635)	(1)	(35)	(36)	(1)
11	Sv Co, Inf Regt.....	(1,310)	(345)	(1,655)	(1)	(68)	(69)	(1)
12	Cn Co, Inf Regt.....	(450)	(145)	(595)	(1)	(28)	(29)	(1)
13	Inf AT Co, 57-mm Gun.....	(510)	(175)	(685)	(1)	(34)	(35)	(1)
14	3 Inf Bns (ea).....	(735)	(260)	(995)	(6)	(46)	(52)	(5)
15	Hq & Hq Co, Inf Bn.....	(330)	(105)	(435)	(2)	(19)	(21)	(1)
16	3 Inf R Cos (ea).....	(30)	(15)	(45)	(1)	(2)	(3)	(1)
17	Inf Hv Wpns Co.....	(315)	(110)	(425)	(1)	(21)	(22)	(1)
18	Div Arty.....	12,675	3,580	16,255	22	694	716	21
19	Hq & Hq Btry, Div Arty.....	(688)	(245)	(933)	(1)	(48)	(49)	(1)
20	3 FA Bns, 105-mm How (ea).....	(2,708)	(830)	(3,538)	(5)	(161)	(166)	(5)
21	Hq & Hq Btry, FA Bn, 105-mm How.....	(688)	(250)	(938)	(1)	(49)	(50)	(1)
22	3 FA Btrys, 105-mm How (ea).....	(460)	(135)	(595)	(1)	(26)	(27)	(1)
23	Sv Btry, FA Bn, 105-mm How.....	(640)	(175)	(815)	(1)	(34)	(35)	(1)
24	FA Bn, 155-mm How.....	(3,863)	(845)	(4,708)	(6)	(163)	(169)	(5)
25	Hq & Hq Btry, FA Bn, 155-mm How.....	(678)	(240)	(918)	(2)	(46)	(48)	(1)
26	3 FA Btrys, 155-mm How (ea).....	(845)	(140)	(985)	(1)	(27)	(28)	(1)
27	Sv Btry, FA Bn, 155-mm How.....	(700)	(185)	(885)	(1)	(36)	(37)	(1)
28	Engr C Bn.....	2,905	860	3,765	6	166	172	4
29	Hq & Hq & Sv Co, Engr C Bn.....	(760)	(245)	(1,005)	(3)	(46)	(49)	(1)
30	3 Engr C Cos (ea).....	(715)	(205)	(920)	(1)	(40)	(41)	(1)
31	Med Bn, Inf Div.....	2,120	985	3,105	65	132	197	5
32	Hq & Hq Det, Med Bn.....	(305)	(115)	(420)	(6)	(17)	(23)	
33	3 Coll Cos, Med Bn (ea).....	(490)	(195)	(685)	(7)	(32)	(39)	(1)
34	Clr Co, Med Bn.....	(345)	(285)	(630)	(38)	(19)	(57)	(2)
35	Inf Div (Totals).....	40,025	16,755	56,780	999	2,352	3,351	95

¹ Data not available for miscellaneous small fuel consuming devices such as pumps, gasoline dispensers, wire reels, etc.

² In computing gasoline requirements, add a 10% safety factor.

³ Includes Atchd Med and Ch.

⁴ Per tables of Equipment.

⁵ Average daily gasoline consumption (net) is 15 gallons per kitchen.⁵

■ 334. AMMUNITION SUPPLY DATA—INFANTRY DIVISION:

a. Units of Fire and Prescribed Loads:

1	2	3	4	5	6	7	8	9	10	11	
	Type of ammunition	Unit of fire		Prescribed Load			Unit of fire		Prescribed Load		
		Rounds	Tons	Rounds	Tons	Units of fire	Rounds	Tons	Rounds	Tons	Units of fire
		ONE INFANTRY REGIMENT					THREE INFANTRY REGIMENTS				
2	.30 caliber, carbine.....	50,160	0.83	83,770	1.38	1.67	150,480	2.48	251,310	4.15	1.67
3	.30 caliber, rifle, M1 & M1 C.....	278,700	11.93	334,440	14.38	1.20	836,100	35.94	1,003,320	43.14	1.20
4	.30 caliber, rifle, automatic.....	101,250	3.80	121,500	4.56	1.20	303,750	11.39	364,500	13.67	1.20
5	.30 caliber, MG, L & Hv.....	120,000	4.62	144,000	5.54	1.20	360,000	13.86	432,000	16.63	1.20
6	.45 caliber, pistol.....	2,930	0.08	5,860	0.16	2.00	8,790	0.24	17,580	0.48	2.00
7	.45 caliber, submachine gun.....	12,600	0.35	4,662	0.13	0.37	37,800	1.04	13,986	0.38	0.37
8	.50 caliber, MG.....	17,500	3.24	23,100	4.27	1.32	52,500	9.71	69,300	12.82	1.32
9	57-mm, AT (M1).....	1,800	15.30	1,080	9.18	0.60	5,400	45.90	3,240	27.54	0.60
10	60-mm, mortar.....	2,700	6.08	2,592	5.83	0.96	8,100	18.23	7,776	17.49	0.96
11	81-mm, mortar, heavy.....	540	5.13	414	3.93	0.77	1,620	15.39	1,247	11.85	0.77
12	81-mm, mortar, light.....	1,260	6.11	990	4.80	0.79	3,780	18.33	2,970	14.40	0.79
13	105-mm, howitzer, (M3).....	1,200	29.40	492	12.05	0.41	3,600	88.20	1,476	36.16	0.41
14	Flares, trip.....	540	0.92	540	0.92	1.00	1,620	2.76	1,620	2.76	1.00
15	Grenade, chemical.....	405	0.48	405	0.48	1.00	1,215	1.44	1,215	1.44	1.00
16	Grenade, hand, fragmentation.....	450	0.48	450	0.48	1.00	1,350	1.44	1,350	1.44	1.00
17	Grenade, hand, offensive.....	450	0.45	as required			1,350	1.35	as required		
18	Grenade, rifle, AT.....	2,736	4.10	4,236	6.35	1.55	8,218	12.32	12,708	19.06	1.55
19	Mine, AT.....	As Atzd	As Atzd	As Atzd	As Atzd	As Atzd	As Atzd	As Atzd	As Atzd	As Atzd	As Atzd
20	Rocket, 2.36".....	672	2.15	672	2.15	1.00	2,016	6.45	2,016	6.45	1.00
21	Signal, aircraft.....	690	0.35	550	0.28	0.80	2,070	1.05	1,650	0.84	0.80
22	SUB-TOTAL.....		95.85		76.87			287.52		230.70	

334. AMMUNITION SUPPLY DATA—INFANTRY DIVISION:

a. Units of Fire and Prescribed Loads (Continued):

1	2	3	4	5	6	7	8	9	10	11
Type of ammunition	Unit of fire		Prescribed Load			Unit of fire		Prescribed Load		
	Rounds	Tons	Rounds	Tons	Units of fire	Rounds	Tons	Rounds	Tons	Units of fire
ONE FIELD ARTILLERY BATTALION (105-mm Howitzer)						THREE FIELD ARTILLERY BATTALIONS (105-mm Howitzer)				
23 .30 caliber, carbine.....	25,680	0.42	51,360	0.85	2.01	77,040	1.27	154,080	2.54	2.01
24 .45 caliber, pistol.....	660	0.02	1,320	0.04	2.10	1,980	0.05	4,158	0.11	2.10
25 .50 caliber, MG.....	10,500	1.94	27,720	5.13	2.62	31,500	5.83	83,160	15.38	2.62
26 105-mm, howitzer, M2.....	2,400	58.80	2,196	53.80	0.92	7,200	176.40	6,588	161.40	0.92
27 Rocket, 2.36".....	240	0.77	240	0.77	1.00	720	2.30	720	2.30	1.00
28 SUB-TOTAL.....		61.95		59.59			185.85		181.73	
						ONE FIELD ARTILLERY BATTALION (155-mm Howitzer)				
29 .30 caliber, carbine.....						26,220	0.43	52,440	0.87	1.70
30 .45 caliber, pistol.....						680	0.02	1,430	0.04	2.10
31 .50 caliber, MG.....						10,500	1.94	27,720	5.13	2.62
32 155-mm, howitzer, M1.....						1,800	103.50	1,400	80.50	0.78
33 Rocket, 2.36".....						240	0.77	240	0.77	1.00
34 SUB-TOTAL.....							106.66		87.31	
						RECONNAISSANCE TROOP				
35 .30 caliber, carbine.....						5,580	0.09	5,078	0.08	0.91
36 .30 caliber, rifle & MG.....						55,900	2.32	46,748	1.94	0.83
37 .45 caliber, SMG.....						6,000	0.17	10,080	0.28	1.79
38 .50 caliber, MG.....						1,500	0.28	1,980	0.37	1.33
39 37-mm, gun.....						1,300	3.25	208	0.52	0.16
40 60-mm, mortar.....						900	2.03	162	0.36	0.08
41 Grenade, hand, fragmentation.....						(1)		120	0.13	

SUPPLY

334. AMMUNITION SUPPLY DATA—INFANTRY DIVISION:
a. Units of Fire and Prescribed Loads (Continued):

	1	2	3	4	5	6	7	8	9	10	11
1	Type of ammunition	Unit of fire		Prescribed Load			Unit of fire		Prescribed Load		
		Rounds	Tons	Rounds	Tons	Units of fire	Rounds	Tons	Rounds	Tons	Units of fire
42	Grenade, rifle, AT.....						(¹)		380	0.57	
43	Mine, AT ²						(¹)				As Atzd
44	Rocket, 2.36''.....						30	0.10	24	0.08	0.80
45	SUB-TOTAL.....							8.24		4.33	
							DIV HQ & HQ CO, SIG CO, ORD CO, HQ & HQ BTRY DIV ARTY, ENGR BN, QM CO				
46	.30 caliber, carbine.....						51,680	0.85	67,180	1.11	1.30
47	.30 caliber, MG and rifle.....						213,000	8.84	101,282	4.20	0.48
48	.45 caliber, pistol and SMG.....						10,010	0.28	12,312	0.34	1.23
49	.50 caliber, MG.....						22,500	4.16	46,800	8.66	2.08
50	57-mm, gun, AT.....						300	2.55	180	1.53	0.60
51	Rocket, 2.36''.....						336	1.08	606	1.94	1.81
52	Grenade, hand, fragmentation.....						(¹)		714	0.76	
53	Grenade, chemical.....						(¹)		168	0.27	
54	Grenade, rifle, AT.....						(¹)		1,880	2.82	
55	Mine, AT ²						(¹)				As Atzd
56	Mine Antipersonnel ²						(¹)				As Atzd
57	Signals, ground.....						(¹)		436	0.28	
58	SUB-TOTAL.....							17.76		21.91	
59	TOTAL FOR DIVISION.....							606.03		525.98	

¹ Unit of fire not published.

² Depends upon type of mine carried. See Par 322 for weights of various types of AT and antipersonnel mines.

³ Carried by Engr Bn.

334. AMMUNITION SUPPLY DATA—INFANTRY DIVISION:

*b. Resupply Capacity of Organic Ammunition Vehicles of the Infantry Regiments and Artillery Battalions:*¹

1	1		2	3	4	5	6	7	8	9	10	11	12	13
1	Unit		Tractor Medium M5 (²)	Truck 2½- ton	Truck 1½- ton	Trailer 1-ton (⁴)	Trailer 4-ton Am	Capa- city (tons)	Tractor Medium M5 (²)	Truck 2½- ton	Truck 1½- ton	Trailer 1-ton (⁴)	Trailer 4-ton Am	Capa- city (tons)
	INFANTRY		ONE INFANTRY REGIMENT						THREE INFANTRY REGIMENTS					
2	Sv Co Am Tn.....			6				15.0		18				45.0
3	Cn Co.....			3		3		10.5		9		9		31.5
4	AT Co ³				2	2		5.0			6	6		15.0
5	TOTAL INF.....			9	2	5		30.5		27	6	15		91.5
	ARTILLERY		ONE ARTILLERY BATTALION						DIVISION ARTILLERY (3 Bns — 105-mm How) (1 Bn — 155-mm How)					
6	105-mm How	How, Btry Am Secs.....		6		6		21.0		18		18		63.0
7		Sv Btry Am Tn.....		9		9		31.5		27		27		94.5
8	155-mm How	How Btry Am Secs.....	6				6	31.8	6				6	31.8
9		Sv Btry Am Tn.....		9		9		31.5		9		9		31.5
10	TOTAL DIV ARTY.....								6	54		54	6	220.8

¹ Prime movers and weapon carriers not included since they are not normally used for resupply purposes. (Total resupply capacity is therefore generally less than prescribed load.)

² Two 1½-ton Trks and 1-ton Tlrs for carrying AT mines in each AT Co.

³ Carries 24 rounds 155-mm How Am or 1.38 tons.

⁴ Tlr, Am, M10 (1-ton capacity) in FA Bns.

■ 335. GAS AND OIL SUPPLY DATA—ANTIAIRCRAFT ARTILLERY UNITS: ^{1 2 3}

	1	2	3	4	5	6	7	8	9	10	11	12	13
	Unit	Fuel and Lubricant Requirements— Motor Vehicles				Gasoline Capacity	Gallons fuel to fill tanks	Total	Fuel Can Data			Organic Kitchens	
		Consumption in moving 100 miles							Organic fuel cans ¹				
		Vehicle fuel (gals)	Engine oil (gals)	Gear lube (lbs)	Grease, miscel- laneous (lbs)	Vehicle, tanks	Cans, 5-gal, vehicle only ²	Drums, 55-gal		Ki- & Misc	Motor vehicle		Total
2	Hq & Hq Btry AAA Brig.....	110	3.8	5.9	2.5	300	90	390	1	18	19	1	
3	Hq & Hq Btry AAA Gp.....	96	2.3	3.8	1.8	250	80	330	1	16	17	1	
4	AAA AW Bn, Mbl.....	1,420	60.2	89.6	33.2	4,175	1,105	4,280	73	221	291	5	
5	Hq & Hq Btry.....	(248)	(9.8)	(14.0)	(6.4)	(715)	(205)	(920)	(1)	(41)	(42)	(1)	
6	4 AW Btrys (ea).....	(293)	(12.6)	(18.9)	(6.7)	(865)	(225)	(1,090)	(18)	(45)	(63)	(1)	
7	AAA AW Bn, Sem.....	454	18.3	27.3	10.7	1,310	365	1,675	73	73	146	5	
8	Hq & Hq Btry.....	(330)	(13.9)	(20.5)	(7.9)	(970)	(265)	(1,235)	(1)	(53)	(54)	(1)	
9	4 AW Btrys (ea).....	(31)	(1.1)	(1.7)	(0.7)	(85)	(25)	(110)	(15)	(5)	(23)	(1)	
10	AAA AW Bn, SP.....	2,908	109.7	83.3	110.2	6,295	1,195	7,490	42	239	281	5	
11	Hq & Hq Btry.....	(439)	(18.1)	(19.7)	(13.4)	(1,175)	(275)	(1,450)	(6)	(55)	(61)	(1)	
12	4 AW Btrys (ea).....	(622)	(22.9)	(15.9)	(24.2)	(1,280)	(230)	(1,510)	(9)	(49)	(55)	(1)	
13	AAA Gun Bn, Mbl.....	2,184	64.5	86.0	35.2	5,415	1,025	6,440	18	205	223	5	
14	Hq & Hq Btry.....	(308)	(11.7)	(15.6)	(6.4)	(835)	(205)	(1,040)	(2)	(41)	(43)	(1)	
15	4 Gun Btrys (ea).....	(469)	(13.2)	(17.6)	(7.2)	(1,145)	(205)	(1,350)	(4)	(41)	(45)	(1)	
16	AAA Gun Bn, Sem.....	759	22.9	29.7	12.7	1,855	380	2,235	18	76	94	5	
17	Hq & Hq Btry.....	(635)	(18.5)	(22.9)	(9.9)	(1,515)	(280)	(1,795)	(2)	(56)	(58)	(1)	
18	4 Gun Btrys (ea).....	(31)	(1.1)	(1.7)	(0.7)	(85)	(25)	(110)	(4)	(5)	(9)	(1)	
19	AAA SL Bn.....	1,413	39.5	53.5	23.3	3,110	715	3,825	185	143	328	4	
20	Hq & Hq Btry.....	(180)	(4.7)	(6.4)	(3.2)	(315)	(100)	(415)	(2)	(20)	(22)	(1)	
21	3 SL Btrys (ea).....	(411)	(11.6)	(15.7)	(6.7)	(905)	(205)	(1,110)	(61)	(41)	(102)	(1)	
22	AAA Balloon Bn, VLA.....	607	20.9	32.9	13.5	1,655	495	2,150	182	99	281	4	
23	Hq & Hq Btry.....	(151)	(6.2)	(9.2)	(3.6)	(440)	(120)	(560)	(20)	(24)	(44)	(1)	
24	3 Balloon Btrys (ea).....	(152)	(4.9)	(7.9)	(3.3)	(405)	(125)	(530)	(54)	(25)	(79)	(1)	

¹ Data not available for miscellaneous small fuel consuming devices.

² In computing gasoline requirements, add a 10 percent safety factor.

³ Per Tables of Equipment.

⁴ Average daily gasoline consumption (net) is 15 gallons per kitchen.²

⁵ Includes atchd Med.

⁶ Motor vehicles cans only. Does not include kitchen and miscellaneous.

■ 336. AMMUNITION SUPPLY DATA—ANTI-AIRCRAFT UNITS:

	1	2	3	4	5	6
1	Type of ammunition	Unit of Fire		Prescribed Load		
		Rounds	Tons	Rounds	Tons	Unit of fire
AAA AW BN MBL						
2	.30 cal carbine.....	5,580	0.09	5,580	0.09	1.00
3	.30 cal rifle.....	84,450	3.63	84,450	3.63	1.00
4	.45 cal pistol and SMG.....	24,230	0.67	24,230	0.67	1.00
5	.50 cal machine gun ¹	164,600	30.45	183,800	34.00	1.12
6	2.36" rocket.....	192	0.61	192	0.61	1.00
7	40-mm gun.....	9,600	31.68	9,600	31.68	1.00
8	TOTAL.....		67.13		70.68	
AAA AW BN SEM						
9	.30 cal carbine.....	5,460	0.09	5,460	0.09	1.00
10	.30 cal rifle.....	94,800	4.08	94,800	4.08	1.00
11	.45 cal pistol and SMG.....	8,230	0.23	8,230	0.23	1.00
12	.50 cal machine gun ¹	156,100	28.88	175,300	32.43	1.12
13	2.36" rocket.....	192	0.61	192	0.61	1.00
14	40-mm gun.....	9,600	31.68	9,600	31.68	1.00
15	TOTAL.....		65.57		69.12	
AAA AW BN SP						
16	.30 cal carbine.....	5,340	0.09	5,340	0.09	1.00
17	.30 cal rifle and machine gun.....	89,300	3.71	89,300	3.71	1.00
18	.45 cal pistol and SMG.....	26,230	0.72	26,230	0.72	1.00
19	.50 cal machine gun ²	239,400	44.29	464,680	85.97	1.94
20	37-mm gun.....	9,600	20.40	9,600	20.40	1.00
21	TOTAL.....		69.21		110.89	
AAA GUN BN MBL						
22	.30 cal carbine.....	5,220	0.08	5,220	0.08	1.00
23	.30 cal rifle.....	76,500	3.29	76,500	3.29	1.00
24	.45 cal pistol and SMG.....	21,830	0.60	21,830	0.60	1.00
25	.50 cal machine gun.....	38,700	7.16	38,700	7.16	1.00
26	2.36" rocket.....	48	0.15	48	0.15	1.00
27	90-mm gun.....	2,000	64.50	2,000	64.50	1.00
28	TOTAL.....		75.78		75.78	
AAA GUN BN SEM						
29	.30 cal carbine.....	5,100	0.08	5,100	0.08	1.00
30	.30 cal rifle.....	73,050	3.14	73,050	3.14	1.00
31	.45 cal pistol and SMG.....	8,230	0.23	8,230	0.23	1.00
32	.50 cal machine gun.....	26,200	4.85	26,200	4.85	1.00
33	2.36" rocket.....	48	0.15	48	0.15	1.00
34	90-mm gun.....	2,000	64.50	2,000	64.50	1.00
35	TOTAL.....		72.95		72.95	

¹ On M55 mount.² On M15A1 carriage.

■ 337. GAS AND OIL SUPPLY—SEPARATE ARMORED UNITS: ^{1 2}

	1	2	3	4	5	6	7	8	9	10	11	12
1	Unit	Fuel and Lubricant Requirements—Motor Vehicles							Fuel Can Data			
		Consumption in moving vehicles 100 miles				Gallons fuel to fill tanks			Organic fuel cans			Org Kis ³
		Vehicle fuel (Gal)	Engine oil (Gal)	Lube (Lbs)	Grease, miscel- laneous (Lbs)	Vehicle tanks	Cans, 5-gal	Total	Ki & Misc	Motor Veh	Total	
2	Hq & Hq Co, Armd Gp.....	403	26	9	15	965	365	1,330	1	72	73	1
3	Sep Tk Bn ¹											
4	Light Tk Bn.....	5,420	381	47	135	9,585	4,705	14,290	5	936	941	5
5	Hq & Hq Co.....	(858)	(55)	(12)	(29)	(1,830)	(70)	(1,700)	(1)	(13)	(14)	(1)
6	3 Tk Cos (ea) (L).....	(1,339)	(96)	(2)	(30)	(2,200)	(25)	(2,225)	(1)	(4)	(5)	(1)
7	Sv Co.....	(546)	(38)	(29)	(16)	(1,355)	(4,560)	(5,915)	(1)	(911)	(912)	(1)
8	Amphibian Tractor Bn.....	24,058	1,200	14 ⁴	7 ⁴	13,835	515	14,650	14	149	163	3
9	Hq & Hq & Sv Co.....	(3,594)	(178)	(10)	(5)	(2,425)	(215)	(2,640)	(2)	(41)	(43)	(1)
10	2 Tractor Cos (ea).....	(10,232)	(511)	(2)	(1)	(5,705)	(300)	(6,005)	(6)	(54)	(60)	(1)
11	Amphibian Tank Bn.....	17,762	887	20 ⁴	9 ⁴	10,610	690	11,300	10	128	138	5
12	Hq & Hq & Sv Co.....	(1,614)	(79)	(12)	(5)	(1,300)	(170)	(1,540)	(2)	(32)	(34)	(1)
13	4 Tank Cos (ea).....	(4,037)	(202)	(2)	(1)	(2,310)	(130)	(2,440)	(2)	(24)	(26)	(1)

¹ For Armd Inf, Armd FA and Tk Bns, separate, see Par 329.

² In computing gasoline requirements, add a 10% safety factor.

³ For Kis, estimate a daily consumption of 15 gallons ².

⁴ Data not available for LVTs.

■ 338. AMMUNITION SUPPLY DATA—SEPARATE ARMORED UNITS:¹

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	Type of Ammunition	Amphibian Tractor Bn				L Tk Bn				Amphibian Tank Bn				Hq & Hq Co, Armd Gp			
		Unit of Fire		Prescribed Load ²		Unit of Fire		Prescribed Load ²		Unit of Fire		Prescribed Load ²		Unit of Fire		Prescribed Load ²	
		Rounds	Tons	Rounds	Tons	Rounds	Tons	Rounds	Tons	Rounds	Tons	Rounds	Tons	Rounds	Tons	Rounds	Tons
2	30 cal Carbine.....	20,580	0.34			12,480	0.21			12,300	0.20			4,080	0.06		
3	30 cal MG—Rifle.....	476,000	18.33			247,000	10.60			450,000	17.33			6,000	0.23		
4	45 cal pistol & SMG.....	27,660	0.76			58,830	1.66			101,400	2.78			5,250	0.11		
5	50 cal MG.....	119,000	22.02			98,400	18.08			37,500	6.88			2,000	0.37		
6	3" mortar, M3.....					810	1.01							45	0.06		
7	2.36" launcher, rocket.....	60	0.19			182	0.52			160	0.51			48	0.15		
8	75-mm howitzer, SP.....					900	9.90			22,500	247.50						
9	75-mm gun, Tk.....					5,400	75.60							300	3.60		
10	81-mm mortar.....					500	3.04										
11	TOTAL.....		41.64				120.52				275.20				4.58		

¹ For Tank Bn, separate, see Par 331

² Data not available.

339. GAS AND OIL SUPPLY DATA—CAVALRY RECONNAISSANCE SQUADRON, MECHANIZED: ^{1 2}

	1	2	3	4	5	6	7	8	9	10	11	12
1	Unit	Fuel and Lubricant Requirements— Motor Vehicles				Gasoline Capacity			Fuel Can Data			Organic Kitchens (⁴)
		Consumption in moving unit 100 miles ¹				Gallons fuel to fill tanks and cans		Total	Organic Fuel Cans ³			
		Vehicle fuel (Gal)	Engine oil (Gal)	Gear lube (Lbs)	Grease miscel- laneous (Lbs)	Vehicle Tanks	Cans 5-gallon (all)		Ki & Misc	Motor Vehicles	Total	
2	Hq & Hq & Sv Tr	593	33.9	22.3	18.4	1,461	3,325	4,806	627	38	665	1
3	3 Ren Tr (ea)	409	27.6	15.5	20.5	1,333	490	1,823	1	25	26	1
4	Assault Gun Tr	791	20.8	6.9	21.7	1,259	25	1,284	1	4	5	1
5	L Tk Co	1,392	101.5	2.0	29.8	2,260	25	2,285	1	4	5	1
6	Atchd Med	45	1.4	2.0	1.2	• 120	25	145		5	5	
7	Cav Sq, Mecs	4,048	240.4	77.7	132.6	9,119	4,670	13,989	632	126	758	6

¹ Not applicable to Cav Sq, Mecs in Armd Div.

² In computing gasoline requirements, add 10% safety factor.

³ Per Tables of Equipment.

⁴ Average daily gasoline consumption (net) is 15 gallons per kitchen.³

340. AMMUNITION SUPPLY DATA—CAVALRY RECONNAISSANCE SQUADRON, MECHANIZED: ¹

	1	2	3	4	5	6
1	Type of ammunition	Unit of fire		Prescribed Load		
		Rounds	Tons	Rounds	Tons	Units of fire
2	.30 caliber, carbine.....	26,040	0.43	71,090	1.17	2.73
3	.30 caliber, machine gun and rifle.....	257,350	10.68	259,924	10.79	1.01
4	.45 caliber, submachine gun and pistol.....	40,430	1.11	35,983	0.99	0.89
5	.50 caliber, machine gun.....	24,000	4.44	25,200	4.66	1.05
6	37-mm gun.....	4,000	10.00	3,480	8.70	0.87
7	60-mm mortar.....	2,700	6.08	648	1.46	0.24
8	75-mm gun, Tk.....	1,700	20.40	816	9.79	0.48
9	75-mm howitzer.....	1,800	19.80	828	9.11	0.46
10	81-mm mortar.....	300	1.88	240	1.50	0.80
11	2.36" rocket.....	186	0.60	562	1.79	3.02
12	TOTAL.....		75.42		49.96	

¹ Not applicable to Cav Sq, Mecs in Armd Div.

341. PRESCRIBED LOADS SQUADRON TRAIN, CAVALRY RECONNAISSANCE SQUADRON, MECHANIZED: ¹

	Truck, 2½-ton	Trailer, 1-ton	Tons
a. Cargo capacity (tons)	9	9	31.5
b. Items of prescribed loads:			
(1) Ration and Supplies	2	2	7.00
(2) Gasoline and oil	4	4	14.00
(3) Ammunition	2	2	7.00
(4) Water	1	1	3.50
c. TOTAL PRESCRIBED LOADS			31.50

¹ Not applicable to Cav Sq, Mecs in Armd Div.

■ 342. GASOLINE AND OIL SUPPLY DATA :

a. Chemical Mortar Battalion: ¹

	1	2	3	4	5	6	7	8	9	10	11	12
		Fuel and Lubricant Requirements— Motor Vehicles				Gasoline Capacity		Fuel Can Data				
	Unit	Consumption in moving unit 100 miles ¹				Gallons fuel to fill tanks		Organic fuel cans ²				Organic Kitchens (³)
		Vehicle fuel (gallons)	Engine oil (gallons)	Gear lube (pounds)	Grease misc (pounds)	Vehicle tanks	Cans 5-gal (all)	Total	Ki & Misc	Motor vehicles	Total	
2	Hq & Hq Co.....	138	11	18	6	785	250	1,035	1	49	50	1
3	3 Mortar Cos (ea).....	232	10	10	8	670	225	895	1	44	45	1
4	BN (TOTAL)	834	41	46	30	2,795	925	3,720	4	131	185	4

b. Chemical Smoke Generator Company:

1	M-1 Generator.	349	18	29	11	1,325	340	1,665	1	69	70	1
2	M-2 Generator	249	10	12	8	725	225	950	1	45	46	1

¹ In computing gasoline requirements, add a 10% safety factor.
² Per Tables of Equipment.
³ Average daily consumption (net) is 15 gallons per kitchen. ¹

■ 343. AMMUNITION SUPPLY DATA:

a. Chemical Mortar Battalion:

(1) Unit of fire and prescribed load:

	1	2	3	4	5	6
1	Type of ammunition	Unit of fire		Prescribed Load		
		Rounds	Tons	Rounds	Tons	Units of fire
2	.30 caliber, carbine.....	30,660	0.51	51,100	0.84	1.67
3	.30 caliber, rifle.....	6,300	0.27	6,300	0.27	1.69
4	.45 caliber, pistol.....	30	0.00	63	0.00	2.10
5	.50 caliber, machine gun.....	6,000	1.11	9,000	1.67	1.50
6	2.36" rocket.....	120	0.38	120	0.38	1.00
7	4.2" chemical mortar ¹	2,160	35.10	4,248	69.00	1.97
8	TOTAL.....		37.37		72.16	

¹ Type of Am (gas, smoke, or HE) prescribed to fit anticipated action.

(2) Prescribed load of 4.2 ammunition will be 4,248 rounds. Break-down of loading is as follows:

12-2½-ton Trks in Bn Am Sec @ 150 rounds each.....	1,800 rounds
12-1-ton Tlrs in Bn Am Sec @ 60 rounds each.....	720 rounds
36-¼-ton Trks & Tlrs (Mortars) @ 8 rounds each.....	288 rounds
36-¼-ton Trks & Tlrs (Am) @ 20 rounds each.....	720 rounds
9-1½-ton Trks (3 per Co) ¹ @ 80 rounds each.....	720 rounds
TOTAL PRESCRIBED LOAD.....	4,248 rounds

¹ It is contemplated that the 1-ton trailers in the platoon will be used for transporting platoon equipment.

(3) Resupply Capacity:

12-2½-ton Trks in Bn Am Sec @ 150 rounds each.....	1,800 rounds
12-1-ton Tlrs in Bn Am Sec @ 60 rounds each.....	720 rounds
36-¼-ton Trks & Tlrs in Co Am Sec @ 20 rounds each.....	720 rounds
9-1½-ton Trks in Plat Am Sec @ 80 rounds each.....	720 rounds
TOTAL RESUPPLY CAPACITY.....	3,960 rounds

b. Chemical Smoke Generator Co:

(1) Co equipped with 24 generators, smoke, mechanical M-1, expends 100 gallons fog oil per hour of operation per generator—total 2,400 gal per hr.

(2) Co equipped with 50 generators, smoke, mechanical M-2, expends 50 gallons fog oil per hour of operation per generator—total 2,500 gal per hr.

■ 344. GAS AND OIL SUPPLY DATA—SEPARATE FIELD ARTILLERY UNITS: 1 2 4

344

SUPPLY

CHAPTER 2—PAGE 68

	1	2	3	4	5	6	7	8	9	10	11	12
1	Unit	Fuel and Lube Requirements—Motor Vehicles										Organic Kitchens (1)
		Gasoline Capacity				Fuel Can Data						
		Consumption in moving unit 100 miles ¹				Gallons fuel to fill tanks			Organic fuel cans			
		Vehicle fuel (gallons)	Engine oil (gallons)	Gear lube (pounds)	Grease, miscel- laneous (pounds)	Vehicle Lubricants	Can 5-gallon	1 Total	Ki & Misc ²	Motor Vehicles	Total	
2	Hq & Hq Btry, Mts, FA Brig	220	7.2	12.0	4.4	520	285	850	9	44	53	1
3	Hq & Hq Btry, FA Gp	207	6.3	10.2	4.2	520	245	765	9	40	49	1
4	FA Obsn Bn	983	31.7	50.6	19.8	2,620	810	3,430	3	159	162	3
5	Hq & Hq Btry Obsn Bn	(311)	(9.9)	(16.2)	(6.2)	(800)	(260)	(1,060)	(1)	(51)	(52)	(1)
6	2 Obsn Btrys, (ea)	(336)	(11.5)	(18.4)	(7.2)	(910)	(275)	(1,185)	(1)	(54)	(55)	(1)
7	FA Bn, Mts, 105-mm How, Tr-Dr	1,627	206.3	35.6	15.0	4,180	805	5,045	13	160	173	5
8	Hq & Hq Btry	(231)	(6.4)	(7.3)	(4.1)	(555)	(270)	(825)	(9)	(45)	(54)	(1)
9	3 105-mm How Btrys (ea)	(392)	(63.6)	(4.2)	(2.0)	(995)	(140)	(1,135)	(1)	(27)	(28)	(1)
10	Sv Btry	(220)	(9.1)	(13.9)	(4.9)	(640)	(175)	(815)	(1)	(34)	(35)	(1)
11	FA Bn, Mts, 105-mm How, Trk Dr, (Non Divisional)	930	33.9	(52.9)	20.1	2,410	835	3,245	13	154	167	5
12	Hq & Hq Btry	(369)	(12.8)	(20.3)	(7.7)	(480)	(270)	(750)	(9)	(45)	(54)	(1)
13	3 105-mm How Btrys (ea)	(158)	(6.0)	(9.3)	(3.5)	(430)	(130)	(560)	(1)	(25)	(26)	(1)
14	Sv Btry	(87)	(3.1)	(4.7)	(1.9)	(640)	(175)	(815)	(1)	(34)	(35)	(1)
15	Armd FA Bn, 105-mm How, See Armd Div, Par 329, lines 23-26.											
16	FA Bn, Mts, 4.5" Rocket, Trk-Dr	1,594.0	61.1	91.7	33.4	4,355	1,365	5,720	10	203	273	5
17	Hq & Hq Btry	(269.0)	(8.2)	(12.7)	(5.7)	(685)	(235)	(920)	(4)	(43)	(47)	(1)
18	3 Rocket Btrys (ea)	(301.7)	(11.6)	(17.2)	(6.1)	(810)	(265)	(1,075)	(1)	(52)	(53)	(1)
19	Sv Btry	(419.9)	(18.1)	(27.4)	(9.4)	(1,240)	(335)	(1,575)	(3)	(64)	(67)	(1)
20	FA Bn, Mts, 155-mm How (or 4.5" Gun) Tr-Dr	1,665	207.2	36.5	23.2	4,255	875	5,130	13	162	175	5
21	Hq & Hq Btry	(236)	(6.6)	(7.5)	(4.3)	(570)	(270)	(840)	(9)	(45)	(54)	(1)
22	3 155-mm How (or 4.5" Gun) Btrys (ea)	(392)	(63.6)	(4.8)	(4.5)	(995)	(140)	(1,135)	(1)	(27)	(28)	(1)
23	Sv Btry	(253)	(9.8)	(14.6)	(5.4)	(700)	(185)	(885)	(1)	(36)	(37)	(1)
24	FA Bn, Mts, 155-mm Gun, Tr-Dr	1,590	203.6	34.0	13.2	3,380	840	4,220	13	155	168	5
25	Hq & Hq Btry	(231)	(6.8)	(10.9)	(4.3)	(555)	(265)	(820)	(9)	(44)	(53)	(1)
26	3 155-mm Gun Btrys (ea)	(412)	(64.0)	(5.8)	(2.2)	(830)	(165)	(995)	(1)	(32)	(33)	(1)
27	Sv Btry	(123)	(4.8)	(5.7)	(2.3)	(335)	(80)	(415)	(1)	(15)	(16)	(1)
28	FA Bn, Mts, 155-mm Gun, Trk-Dr	1,410	38.0	48.4	20.4	4,280	810	5,090	13	149	162	5
29	Hq & Hq Btry	(231)	(6.8)	(10.9)	(0.7)	(555)	(205)	(820)	(9)	(33)	(53)	(1)
30	3 155-mm Gun Btrys (ea)	(352)	(8.8)	(10.6)	(5.8)	(1,130)	(155)	(1,285)	(1)	(30)	(31)	(1)
31	Sv Btry	(123)	(4.8)	(5.7)	(2.3)	(335)	(80)	(415)	(1)	(15)	(16)	(1)

344. GAS AND OIL SUPPLY DATA—SEPARATE FIELD ARTILLERY UNITS: ^{1 2 4} (Continued):

	1	2	3	4	5	6	7	8	9	10	11	12
1	Unit	Fuel and Lube Requirements—Motor Vehicles										Organic Kitchens (¹)
		Consumption in moving unit 100 miles ²				Gasoline Capacity		Fuel Can Data				
						Gallons fuel to fill tanks		Organic fuel cans				
		Vehicle fuel (gallons)	Engine oil (gallons)	Gear lube (pounds)	Grease, miscel- laneous (pounds)	Vehicle tanks	Cans 5-gallon	Total	Ki & Mtec ³	Motor Vehicles	Total	
32	FA Bn, Mts, 155-mm Gun, SP.....	3,803	289.4	39.4	72.6	6,800	930	7,730	353	173	526	5
33	Hq & Hq Btry.....	(231)	(6.8)	(10.9)	(4.3)	(555)	(265)	(820)	(9)	(44)	(53)	(1)
34	3 155-mm Gun Btrys (ea).....	(1,083)	(92.6)	(7.6)	22.0	(1,970)	(195)	(2,165)	(1)	(38)	(39)	(1)
35	Sv Btry.....	(123)	(4.8)	(5.7)	(2.3)	(335)	(80)	(415)	(341)	(15)	(356)	(1)
36	FA Bn, Mts, 8" How, Tr-Dr.....	1,629	205.4	36.7	14.1	3,500	810	4,310	13	149	162	5
37	Hq & Hq Btry.....	(231)	(6.8)	(10.9)	(4.3)	(555)	(265)	(820)	(9)	(44)	(53)	(1)
38	3 8" How Btrys (ea).....	(425)	(64.6)	(6.7)	(2.5)	(870)	(155)	(1,025)	(1)	(30)	(31)	(1)
39	Sv Btry.....	(123)	(4.8)	(5.7)	(2.3)	(335)	(80)	(415)	(1)	(15)	(16)	(1)
40	FA Bn, Mts, 8" How, Trk Dr.....	1,410	38.0	48.4	24.0	4,640	2,530	5,450	13	153	166	5
41	Hq & Hq Btry.....	(231)	(6.8)	(10.9)	(4.3)	(555)	(265)	(775)	(9)	(44)	(44)	(1)
42	3 8" How Btrys (ea).....	(352)	(8.8)	(10.6)	(5.8)	(1,250)	(155)	(1,405)	(1)	(30)	(31)	(1)
43	Sv Btry.....	(123)	(4.8)	(5.7)	(2.3)	(335)	(1,800)	(415)	(1)	(19)	(20)	(1)
44	FA Bn, Mts, 240-mm How, M1918, or 8" Gun, Tr-Dr.....	1,791	71.3	72.7	30.3	7,280	840	8,120	13	155	168	5
45	Hq & Hq Btry.....	(231)	(6.8)	(10.9)	(4.3)	(555)	(265)	(820)	(9)	(44)	(53)	(1)
46	3 Btrys (ea).....	(479)	(19.9)	(18.7)	(7.9)	(2,130)	(165)	(2,295)	(1)	(32)	(33)	(1)
47	Sv Btry.....	(123)	(4.8)	(5.7)	(2.3)	(335)	(80)	(415)	(1)	(15)	(16)	(1)

¹Data not available for miscellaneous small fuel consuming devices.

²In computing gasoline requirements, add a 10% safety factor.

³Average daily gasoline consumption (net) is 15 gallons per kitchen.⁴

⁴Includes Atchd Med.

⁵Tractor, heavy.

⁶4 per airplane.

■ 345. AMMUNITION SUPPLY DATA—SEPARATE FIELD ARTILLERY UNITS:

a. Unit of Fire and Prescribed Loads:

1	1	2	3	4	5	6
1	Type of ammunition	Unit of Fire		Prescribed Load		
		Rounds	Tons	Rounds	Tons	Units of fire
		FA BN 75-mm HOW, PACK, MOUNTAIN				
2	.30 cal carbine.....	23,160	0.38	23,160	0.38	1.00
3	.30 cal rifle, (BAR).....	11,250	0.42	11,250	0.42	1.00
4	.45 cal pistol.....	360	0.02	1,176	0.03	2.10
5	75-mm, howitzer, pack.....	3,600	39.60	756	8.32	0.21
6	TOTAL.....		40.42		9.15	
		FA BN 105-mm HOW TRACTOR DRAWN				
7	.30 cal carbine.....	24,720	0.41	43,330	0.71	1.75
8	.45 cal pistol.....	670	0.02	1,407	0.04	2.10
9	.50 cal machine gun.....	10,500	1.94	15,750	2.91	1.50
10	2.36" rocket.....	240	0.77	240	0.77	1.00
11	105-mm howitzer.....	2,400	58.80	2,354	57.67	0.98
12	TOTAL.....		61.94		62.10	
13	For FA BN 105-mm HOW, TRUCK DRAWN, See Inf Div, Par 334, lines 19-22.					
14	For ARMD FA BN, 105-mm HOW, See Armd Div, Par 331, lines 23-26.					
		ROCKET BN. 4.5" LAUNCHER				
15	.30 cal carbine.....	39,660	0.66	79,716	1.33	2.01
16	.45 cal pistol.....	630	0.02	1,323	0.04	2.10
17	.50 cal machine gun.....	11,500	2.11	30,130	5.53	2.62
18	2.36" rocket.....	274	.88	274	.88	1.00
19	4.5" rocket.....	5,184	181.44	5,328	186.40	.99
20	TOTAL.....		184.11		194.18	
		FA BN 155-mm HOW TRACTOR DRAWN				
21	.30 cal carbine.....	26,100	0.43	45,900	0.76	1.76
22	.45 cal pistol.....	680	0.02	1,428	0.04	2.10
23	.50 cal machine gun.....	10,500	1.94	15,750	2.91	1.50
24	2.36" rocket.....	240	0.77	240	0.77	1.00
25	155-mm howitzer, M1.....	1,800	103.50	1,050	60.38	0.58
26	TOTAL.....		106.66		64.86	
		FA BN 155-mm GUN TRACTOR DRAWN				
27	.30 cal carbine.....	28,080	0.46	48,900	0.81	1.74
28	.45 cal pistol.....	610	0.02	1,281	0.03	2.10
29	.50 cal machine gun.....	9,500	1.76	14,250	2.64	1.50
30	2.36" rocket.....	204	0.65	204	0.65	1.00
31	155-mm gun.....	1,200	82.20	870	59.59	0.73
32	TOTAL.....		85.09		63.72	

345. AMMUNITION SUPPLY DATA—FIELD ARTILLERY UNITS:

a. Unit of Fire and Prescribed Loads: (Continued):

1	1	2	3	4	5	6
	Type of ammunition	Unit of Fire		Prescribed Load		
		Rounds	Tons	Rounds	Tons	Units of fire
		FA BN 155-mm GUN TRUCK DRAWN				
33	.30 cal carbine.....	27,780	0.46	48,700	0.80	1.75
34	.45 cal pistol.....	580	0.02	1,218	0.03	2.10
35	.50 cal machine gun.....	9,500	1.76	14,250	2.64	1.50
36	2.36" rocket.....	204	0.65	204	0.65	1.00
37	155-mm gun.....	1,200	82.20	1,200	82.20	1.00
38	TOTAL.....		85.09		86.32	
		FA BN 155-mm GUN SELF-PROPELLED				
39	.30 cal carbine.....	24,900	0.41	43,300	0.71	1.74
40	.45 cal pistol.....	610	0.02	1,281	0.03	2.10
41	.50 cal machine gun.....	15,500	2.87	23,250	4.30	1.50
42	2.36" rocket.....	204	0.65	205	0.69	1.00
43	155-mm gun.....	1,200	82.20	924	63.29	0.77
44	TOTAL.....		86.15		69.02	
		FA BN 8-inch HOW TRACTOR DRAWN				
45	.30 cal carbine.....	29,700	0.49	51,600	0.85	1.74
46	.45 cal pistol.....	610	0.02	1,281	0.03	2.10
47	.50 cal machine gun.....	9,500	1.76	14,250	2.64	1.50
48	2.36" rocket.....	204	0.65	204	0.65	1.00
49	8" howitzer.....	720	84.96	510	60.18	0.71
50	TOTAL.....		87.88		64.35	
		FA BN 8-inch HOW TRUCK DRAWN				
51	.30 cal carbine.....	29,220	0.48	50,800	0.84	1.74
52	.45 cal pistol.....	610	0.02	1,281	0.03	2.10
53	.50 cal machine gun.....	9,500	1.76	14,250	2.64	1.50
54	2.36" rocket.....	204	0.65	204	0.65	1.00
55	8" howitzer.....	720	84.96	750	88.50	1.04
56	TOTAL.....		87.87		92.66	
		FA BN, 8-inch GUN, TRACTOR DRAWN				
57	.30 cal carbine.....	24,840	0.41	41,200	0.68	1.66
58	.45 cal pistol.....	610	0.02	1,281	0.03	2.10
59	.50 cal machine gun.....	9,500	1.76	14,250	2.64	1.50
60	2.36" rocket.....	168	0.54	168	0.54	1.00
61	8-inch gun.....	720	138.96	300	57.90	0.42
62	TOTAL.....		141.69		61.79	

Unit of fire not published.

345. AMMUNITION SUPPLY DATA—FIELD ARTILLERY UNITS:

a. Unit of Fire and Prescribed Loads: (Continued) :

1	Type of Ammunition	2	3	4	5	6
		Unit of Fire		Prescribed Load		
		Rounds	Tons	Rounds	Tons	Units of fire
		FA BN 240-mm		HOW TRACTOR DRAWN		
63	.30 cal carbine.....	24,840	0.41	41,200	0.68	1.66
64	.45 cal pistol.....	610	0.02	1,281	0.03	2.10
65	.50 cal machine gun.....	9,500	1.76	14,250	2.64	1.50
66	2 36" rocket.....	168	0.54	168	0.54	1.00
67	240-mm howitzer.....	360	83.70	300	69.75	0.83
68	TOTAL.....		86.43		73.64	

b. Resupply capacity of organic ammunition vehicles in tons: ^{1 3}

1	Unit	2 Pk Mules	3 Carrier	4 Cargo	5 Truck 2½-ton	6 Truck 7½-ton	7 Tractor Medium M4	8 Tractor Medium M5	9 Tractor Heavy M6	10 Trailer 1-ton Am M10	11 Trailer Am 8-ton	Capacity (Tons)
2	FA BN, 75-mm How Pk											
3	How Btry Am Secs (all).....	48										4.8
3	Hq & Sv Btry Am Tn.....	36										3.6
4	TOTAL BN.....	84										8.4
5	FA BN, 105-mm HOW, TRACTOR DRAWN											
6	How Btry Am Secs (all).....						6					8.2
6	Sv Btry Am Tn.....			9					9			31.5
7	TOTAL BN.....			9			6		9			39.7
8	FA BN 105-mm HOW, TRUCK DRAWN, See Inf Div, Par 334b.											
9	ARM'D FA BN, 105-mm HOW, See Armd Div, Par 331.											
10	ROCKET BN, 4.5" LAUNCHER TRUCK DRAWN											
11	Plat Am Sqs (all).....			6						6 ³		21.0
11	Sv Btry, Am Tn.....			24						24 ³		84.0
12	TOTAL BN.....			30						30 ³		105.0
13	FA BN, 155-mm HOW, TRACTOR DRAWN, See Inf Div Par 334b.											
14	FA BN, 155-mm GCN, TRACTOR DRAWN											
14	Gun Btry Am Secs (all).....					6					6	60.3
15	TOTAL BN.....					6					6	60.3

345. AMMUNITION SUPPLY DATA—FIELD ARTILLERY UNITS:

b. Resupply capacity of organic ammunition vehicles in tons: ^{1 2}

	1	2	3	4	5	6	7	8	9	10	11
1	Unit	Pk Mules	Carrier	Truck	Truck	Tractor Medium	Tractor Medium	Tractor Heavy	Trailer 1-ton	Trailer Am	Capacity
				2½-ton	7½-ton	M4	M5	M6	Am M10	8-ton	(Tons)
16	FA BN, 155-mm GUN, TRUCK DRAWN Gun Btry Am Secs (all).....				6					6	93.0
17	TOTAL BN.....				6					6	93.0
18	FA BN, 155-mm GUN, SELF-PROPELLED Gun Btry Am Secs (all).....		(12) ²	6					6		15.0
19	TOTAL BN.....			6					6		15.0
20	FA BN, 8-inch How, TRACTOR DRAWN How Btry Am Secs (all).....			3		6			3	6	72.7
21	TOTAL BN.....			3		6			3	6	72.7
22	FA BN, 8-inch How, TRUCK DRAWN How Btry Am Secs (all).....				6					6	93.0
23	TOTAL BN.....				6					6	93.0
24	FA BN, 240-mm How, TRACTOR DRAWN FA BN, 8-inch GUN, TRACTOR DRAWN Gun or How Btry Am Secs (all).....			3				6	3	6	72.7
25	TOTAL BN.....			3				6	3	6	72.7

¹Prime movers not included since they are not normally used for resupply.²Accompanies the 155-mm SP gun and carries 155-mm Am—but is not a part of the Btry Am Sec.³Trailer, How, 2 wheel cargo.

■ 346. GAS AND OIL SUPPLY DATA—TANK DESTROYER UNITS:¹

	1	2	3	4	5	6	7	8	9	10	11	12
1	Unit	Fuel and Lubricant Requirements— Motor Vehicles				Gasoline Capacity			Fuel Can Data			Organic Kitchens (⁴)
		Consumption in moving unit 100 miles ¹				Gallons fuel to fill tanks			Organic Fuel Cans			
		Vehicle fuel (gallons)	Engine oil (gallons)	Gear lube (pounds)	Grease, miscel- laneous (pounds)	Vehicle tanks	Cans 5-gallon (all)	Total	Ki & Mic	Motor Vehicles	Total	
2	Hq & Hq Co, TD Gp...	204	6.6	4.0	3.9	310	80	390	1	28	29	1
3	TD Bn (SP)	5,199	595.8	59.2	59.2	10,909 ²	3,440	14,349	518	123	641	6
4	Hq & Hq Co, TD Bn (SP)	(480)	(2.1)	(25.6)	(12.8)	(1,408)	(3,075)	(4,483)	(512)	(71)	(583)	(2)
5	3 TD Cos (SP) (ea)...	(1,483)	(184.5)	(6.8)	(23.6)	*(2,853)	(80)	(2,933)	(1)	(8)	(9)	(1)
6	Ren Co, TD Bn (SP)	(270)	(20.0)	(13.0)	(13.0)	(942)	(125)	(1,067)	(3)	(28)	(31)	(1)
7	TD Bn (Towed)	4,594	449.5	49.0	121.4	8,851	3,420	12,271	6	133	139	5
8	Hq & Hq Co, TD Bn (Towed)	(544)	(29.2)	(28.0)	(17.9)	(1,690)	(3,060)	(4,750)	(3)	(64)	(67)	(2)
9	3 TD Co (Towed) (ea).....	(1,350)	(140.1)	(7.0)	(34.5)	(2,387)	(120)	(2,507)	(1)	(23)	(24)	(1)

¹ In computing gasoline requirements, add a 10% safety factor.

² When equipped with carriage, motor M36, substitute 11,449.

³ When equipped with carriage, motor, M36, substitute (3,033).

⁴ Average daily consumption (net) is 15 gal per kitchen per day¹.

■ 347. AMMUNITION SUPPLY DATA—TANK DESTROYER UNITS:

1		2	3	4	5	6
1	Type of ammunition	Unit of fire		Prescribed load		Units of Fire
		Rounds	Tons	Rounds	Tons	
		TD BN (SP)				
2	.30 caliber, carbine.....	17,580	0.29	83,930	1.38	4.77
3	.30 caliber, MG and rifle ¹	110,400	4.58	141,312	5.86	1.28
4	.45 caliber, pistol.....	790	0.02	1,638	0.04	2.07
5	.50 caliber, machine gun.....	40,000	7.40	107,700	19.92	2.60
6	37-mm gun, AT.....	600	1.50	600	1.50	1.00
7	2.36" rocket.....	372	1.19	1,240	3.97	3.33
8	76-mm gun, AT ²	2,700	38.15	2,844	41.24	1.05
9	90-mm Gun AT ³	2,160	54.00	2,511	62.77	1.16
10	81-mm Mortar, M1.....	300	1.88	90	0.56	0.30
11	Grenade, rifle, AT.....	252	0.38	207	0.31	0.82
12	Pyrotechnics.....	450	0.20	810	0.35	1.80
13	Signals, ground.....	150	0.10	540	0.35	3.60
14	TOTAL.....		53.69 ²		75.48 ²	
			71.54 ³		97.01 ³	
		TD BN (TOWED)				
15	.30 caliber, carbine.....	21,600	0.36	100,500	1.66	4.65
16	.30 caliber, MG and rifle.....	120,750	5.01	191,990	7.97	1.59
17	.45 caliber, pistol and SMG.....	59,630	1.64	144,303	3.97	2.42
18	.50 caliber, machine gun.....	26,500	4.90	100,700	18.63	3.80
19	37-mm gun, AT.....	400	1.00	400	1.00	1.00
20	2.36" rocket.....	426	1.36	1,410	4.51	3.31
21	3" gun, AT.....	2,700	52.65	2,440	47.58	0.80
22	Grenade, rifle, AT.....	702	1.05	106	0.16	0.15
23	Pyrotechnics.....	360	0.15	1,296	0.56	3.60
24	Signals, ground.....	170	0.07	612	0.26	3.60
25	TOTAL.....		68.19		86.30	

¹ Applicable except in those units equipped with 90-mm GMC M-36 B1 where the number of rounds should be increased 2000 per carriage (M-36 B1).

² Battalions equipped with M18 destroyers only.

³ Battalions equipped with M36 destroyers only.

Chapter 4

EVACUATION, REPLACEMENTS, AND PRISONERS OF WAR

	Paragraph
SECTION I. Evacuation	401-408
II. Replacements	409-415
III. Prisoners of War	416-417



EVACUATION, REPLACEMENTS, AND PRISONERS OF WAR

SECTION I EVACUATION

■ 401. ESTIMATE OF PATIENTS—GENERAL.—*a. Classification.*—For medical planning purposes casualties are classified as follows:

(1) *By nature of disability, non-battle casualties into the sick and the injured, and battle casualties into the wounded, the gassed, and the killed in action.*

(2) *By severity of disability, into walking and litter patients.*

(3) *By suitability for evacuation, into transportable and nontransportable.*

(4) *By type of accommodations required for evacuation, into recumbent and sitting.*

b. Non-battle casualties.—(1) For most purposes here discussed and as a practical matter only those casualties which require hospitalization and those which are excused from the performance of military duty for 24 hours or longer need be considered. Such casualties from sickness and non-battle injuries among front-line troops of a seasoned command in campaign, except in a particularly unhealthful region, may be expected to produce a daily admission rate of about three tenths of one percent (0.3%). This average rate can be expected at certain seasons of the year, *without epidemics*, to reach five tenths percent (0.5%) or even more. As a rough rule of thumb about *one-third* of such non-battle casualties may be expected to remain under treatment in their own organization (at aid stations) or in division clearing stations *if there is no interference with the primary mission of reception, treatment and evacuation of battle casualties*. About two thirds of the sick and non-battle injuries may be evacuated from the division area. It should be borne in mind, however, that the aid stations and division clearing stations will be called upon to treat not only the non-battle casualties who are not evacuated, (including those not requiring hospitalization and not excused from performance of military duty for 24 hours or longer) but also the non-battle casualties in process of evacuation.

(2) The daily admission rate to hospitals, from sickness and non-battle injuries, may be shown as follows:

Daily admission rate to hospital per 1000 strength

	Total Army	ETO	MTO	SWP
1942	1.4			
1943	1.6	1.1	1.7	2.3
1944	1.4	1.0	1.9	1.9

401. ESTIMATE OF PATIENTS—GENERAL (Continued):

This daily admission rate would correspond to an admission rate to hospitals and quarters (excused from performance of military duty for 24 hours or longer) of about three tenths of one percent (0.3%) and after some months would result in a constant non-effective rate of about 4.5 percent. For unseasoned troops, in the same climatic conditions, the non-effective rate might reach 6 percent and would be even higher under unfavorable conditions of climate and location.

(3) On the basis of the experience in the Mediterranean Theater during the present war for *non-battle causes* it may be expected that about 0.2 percent will die, 4 percent will be evacuated to the zone of interior and the balance, 95.8 percent, will eventually return to duty. The average stay in hospitals in the theater for non-battle cases admitted to hospital overseas during World War II has been about 19 days while the total average hospitalization, including time spent in zone of interior hospitals, has been about 25 days.

c. Battle Casualties.—(1) The following table has been developed from American experience in active operations and, of course, may not be applicable to a particular situation.

BATTLE CASUALTIES,
INCLUDING KILLED, IN PER CENT OF THE UNIT STRENGTH

	1	2	3	4
	Unit	Average for all days in line	Severe battle day	Maximum battle day
1				
2	Infantry regiment.....	2.5 per cent	12-15 per cent	35 per cent
3	Division.....	1.0 per cent	6-8 per cent	12 per cent
4	Corps.....	0.5 per cent	2-3 per cent	5 per cent
5	Army.....	0.35 per cent ¹	0.7-1.5 per cent	2 per cent

¹ As this is for sustained active operations, the average for one or several armies over a long period of time would be less, and may be taken as 0.2 percent.

(2) In estimating battle casualties in an army, an estimate based on front-line divisions engaged will usually be more accurate than if based on a rate for corps or the army as a whole.

(3) The battle casualties of an entire task force or theater of operations can best be estimated by using the rates incurred in the component divisions or armies, as the relative proportion of front-line troops to the total force will vary widely in each situation.

(4) a. The ratio of killed and wounded among battle casualties can be estimated *approximately* as follows (the figures do not include prisoners or personnel missing in action):

401. ESTIMATE OF PATIENTS—GENERAL (Continued) :

RATIO OF KILLED TO WOUNDED
7 December 1941 Through 31 March 1945

Infantry

European Theater -----	1:5
Mediterranean Theater -----	1:4
Southwest Pacific Area -----	2:7
Pacific Ocean Area -----	1:4
All Theaters -----	2:9

Air Corps

All Theaters -----	5:4
--------------------	-----

Armored

All Theaters -----	2:7
--------------------	-----

Field Artillery

All Theaters -----	1:5
--------------------	-----

In temperate and tropical zones, the over all ratio of killed to wounded may be taken as 1:5.

In the arctic zone, the ratio of killed to wounded will be considerably higher due to death of the wounded from exposure to cold.

(b) On the basis of experience in World War II it may be expected that about 4 percent of the wounded will die in hospital, about 25 percent will be invalided home, of whom about 45 percent will return to duty in the zone of interior, with the result that about 82 percent eventually will return to duty. In World War I about 8 percent of the gunshot wounded died in hospitals. The average stay in hospital of wounded personnel in World War II has been about 94 days which is very close to the corresponding figure of 95 days for gunshot wounded in World War I.

Of the wounded in World War II about 4 percent die in hospital and about

15 percent recover in 15 days
19 percent recover in 15-30 days
17 percent recover in 30-60 "
11 percent recover in 60-90 "
20 percent recover after 90 "

and 14 percent are separated from the Army.

(c) In World War I, of the gas casualties it was found that approximately: 2 per cent die in hospital.

25 per cent recover in 15 days.
27 per cent recover in from 15 to 30 days.
24 per cent recover in from 30 to 60 days.
16 per cent recover after 60 days.
6 per cent are of no further military value.

The average stay in hospital for gas casualties was 41.8 days.

401-402 EVACUATION, REPLACEMENTS, AND PRISONERS OF WAR

401. ESTIMATE OF PATIENTS—GENERAL (Continued) :

(d) Army casualties in World War II as of the first half of May 1945

Killed in Action (KIA)	154,425
Wounded (WIA)	580,706
Missing (MIA)	75,780
Prisoner	106,802
Total	917,713

■ 402. METHOD OF COMPUTING NUMBER OF BEDS REQUIRED.—*a. General.*

Hospital requirements are usually computed in terms of beds in "fixed" hospitals and not in terms of medical units. All unnumbered hospitals and all numbered station and general hospitals are fixed hospitals. Evacuation hospitals and portable surgical hospitals are non-fixed hospitals. Field hospitals and numbered convalescent hospitals may be either fixed or non-fixed depending upon current War Department authorization.

b. Basic data appearing below have been derived from experience thus far reported for World War II.

c. In a theater of operations.—(1) *Basic decisions.*—Prior to calculating bed requirements in a theater of operations, two basic factors must be determined, and they are:

(a) Definition of an *Evacuation Policy*; and

(b) The *expected daily rates of admission* to hospital per 1,000 troops, for disease and non-battle injuries, gassed casualties and gunshot wounds.

(2) *Evacuation Policy* is a command decision made by the War Department upon the recommendation, or with the concurrence of the Theater Commander concerned. It indicates the length, in days, of the maximum period of non-effectiveness for patients who will be held in the theater for treatment. Patients, who in the opinion of responsible medical officers, cannot be returned to a duty status within the period prescribed, are to be returned to the zone of the interior by the first available and suitable transportation, provided the travel required will not aggravate their disabilities. The periods considered may be 30 days, 60 days, 90 days, 120 days, or 180 days. The minimum of 120 days is regarded as desirable in order to minimize the loss of trained men to the theater. A theater commander who desires a change in the announced evacuation policy submits his recommendations to the War Department with reasons therefore. A 120 day evacuation policy may be generally accepted as a reasonable period in advance planning for fixed hospitalization for any active theater.

(3) *Daily admission rates to hospitals in a Theater of Operations.*—

(a) In estimating daily hospital admission rates important factors are: climatic conditions, terrain, status of the training of the troops, type of combat expected, enemy capabilities, etc. For detailed study see Army Medical Bulletin No. 24 (*War Casualties*, by Lieut. Colonel Albert G. Love,

402. METHOD OF COMPUTING NUMBER OF BEDS REQUIRED (Continued) :

M.C.) which text is based upon a study of all phases of hospitalization of the personnel of the United States Army during the World War I of 1917-18. As is indicated on the table in Par 401b (2) daily rates of admission for non-battle causes have varied widely among the theaters. Battle wounded admission rates are of course subject to wide fluctuation.

(b) The rates prevailing in the European Theater of Operations during the last six months of 1944 are given below together with the corresponding rates experienced by the AEF in 1918:

*Daily Rate of Admission to Hospital per 1000 Strength**ETO July-Dec. 1944 AEF 1918*

Disease and non-battle injury	1.0	1.65
Gas casualties	—	.24
Gunshot wounds	.6	.53

d. *Bed requirements per 1000 troops in theater of operations.*—(1) In order to estimate the bed requirements of patients admitted to hospitals in overseas theaters, it is important to have an understanding of the manner in which hospital cases accumulate and the extent of the accumulation when a certain rate of admission prevails over a period of time. The following table, based on the experience thus far available for hospital admissions overseas during World War II, shows for both non-battle cases and battle wounded, the number of cases per 1,000 total theater strength, which would accumulate in a theater of operations and zone of interior and in a theater alone, with an admission rate for each type of case of 1 per 1000 per day and a 120 day evacuation policy.

TABLE 1.

1	Hospital days of treatment	2	3	4	5	6	7
		<i>Accumulation of patients per 1,000 strength based on admission rates of 1 per 1,000 a day each for non-battle cases and battle wounded and an evacuation policy of 120 days</i>					
		<i>Non-battle cases</i>			<i>Battle wounded</i>		
		<i>Total</i>	<i>T of Opns</i>	<i>ZI Evacuees</i>	<i>Total</i>	<i>T of Opns</i>	<i>ZI Evacuees</i>
2	1.....	1.00	1.00	0	1.00	1.00	0
3	5.....	4.56	4.56	0	4.81	4.81	0
4	10.....	7.64	7.64	.02	9.13	9.13	0
5	20.....	11.40	11.38	.02	16.87	16.71	.16
6	30.....	13.55	13.47	.08	23.66	23.14	.52
7	60.....	17.20	16.60	.60	40.05	36.63	3.42
8	90.....	19.45	18.38	1.07	52.19	43.53	8.66
9	120.....	20.98	19.48	1.50	61.40	46.75	14.65
10	150.....	21.97	19.48	2.49	68.42	46.75	21.67
11	180.....	22.59	19.48	3.11	73.95	46.75	27.20
12	240.....	23.21	19.48	3.73	82.18	46.75	35.43
13	300.....	23.46	19.48	3.98	87.82	46.75	41.07
14	360.....	23.56	19.48	4.08	90.80	46.75	44.05
15	Over 360.....	23.65	19.48	4.17	94.22	46.75	47.47

402. METHOD OF COMPUTING NUMBER OF BEDS REQUIRED (Continued) :

The difference between the Total and the Theater of Operations columns will give the accumulated patients *in the zone of interior and in transit to the zone of interior*. These accumulation factors take into account not only the admission to hospital but also the various dispositions of patients from the hospitals. For hospital admission rates other than 1 per 1000 per day merely multiply the figures in the above table by the assumed admission rate.

(2) Applying these accumulation factors to the rates of hospital admission prevailing in the European Theater during the *last six months of 1944* will provide a basis for estimating the accumulation of patients per 1000 strength in a theater which is expected to experience similar rates.

TABLE 2.

ACCUMULATION OF HOSPITAL PATIENTS IN THEATER OF OPERATIONS
(Based on JUL-DEC 1944 ETO Admission Rates and 120 Day Evacuation Policy)

	1	2	3	4	5	6	7
1	Cause of admission	Daily hospital admission rate per 1,000	Hospital patients in theater per 1,000 strength				
			D+30	D+60	D+90	D+120	D+180
2	Disease and non-battle injury.....	1.0	13.47	16.60	18.38	19.48	19.48
3	Battle wounded.....	.6	13.88	21.98	26.12	28.05	28.05
4	TOTAL.....		27.35	38.58	44.50	47.53	47.53
5	Increase 20% for hospital beds [Sub Par (3) below].....		5.47	7.72	8.90	9.51	9.51
6	TOTAL+20%.....		32.82	46.30	53.40	57.04	57.04

(3) A 20% factor for dispersion has been used generally during World War II. The dispersion factor is required mainly for the following reasons:

(a) At any given time, a certain proportion of the authorized beds for a theater will be packed for shipment within the theater. The greater the morbidity of the troops, the greater the allowance required in this account.

(b) For smaller troop units operating at some distance from the main bodies of troops it will be necessary to furnish complete hospital units even though it is realized that the troop unit will not be likely to fully utilize the hospital facilities provided.

(c) The general practice of separate wards for patients of different sexes, cases of contagious diseases, and for cases requiring different types of treatment will also necessitate a safety margin in each ward since the proportions of the various classes will vary from time to time.

402. METHOD OF COMPUTING NUMBER OF BEDS REQUIRED (Continued) :

e. Total Bed Requirements.—(1) The total fixed bed requirements in a theater of operations with a 120 day evacuation policy may be estimated as follows. The requirements for 1,000 Army personnel are obtained by:

Daily Admission Rate per 1,000 $\times$ accumulations for 120 days + dispersion factor.

(2) Example :

	Rate	Accumulative 120 Days	Dispersion Factor	
Nonbattle cases—	1.00	$\times 19.48$	$+ 20\%$	= 23.4 per 1,000
Battle wounded—	0.6	$\times 46.75$	$+ 20\%$	= 33.7 per 1,000
Total of 57.1 per 1,000 or 5.7 per cent				

f. Bed requirements in the Zone of Interior.

(1) Fixed beds are required in the zone of interior for those troops which did not depart for the theater of operations. When new recruits are being inducted in large numbers morbidity tends to be rather high and beds equal in number to as much as 5 percent of the zone of interior strength may be necessary. After the period of training is over beds equal in number to about 4 percent of the zone of interior strength may be sufficient.

(2) It is also necessary to compute bed requirements for those cases evacuated from the theater of operations, or which may be evacuated under the approved policy of sending patients home to zone of interior hospitals. Such additional beds have recently been estimated on the basis of the expected numbers of evacuees arriving in the United States (disease and non-battle injury and battle casualty cases being separately considered) and the average duration of stay of such cases in zone of interior hospitals.

TABLE 3.
ACCUMULATION OF THEATER OF OPERATIONS PATIENTS IN ZI HOSPITALS—120 Day Evacuation Policy
(Based on JUL-DEC 1944 ETO Admission Rates)

	1	2	3	4	5	6	7	8
1	Cause of admission	Daily hospital admission rate per 1,000	Theater patients in ZI hospitals per 1,000 theater strength					
			D+ 60	D+ 90	D+ 120	D+ 180	D+ 360	D+ 540
2	Disease and non-battle injury.....	1.0	0.60	1.07	1.50	3.11	4.08	4.17
3	Battle wounded.....	.6	2.05	5.20	8.79	16.32	26.43	28.48
4	TOTAL.....		2.65	6.27	10.29	19.43	30.51	32.65
5	Increase by 20%.....		0.53	1.25	2.06	3.89	6.10	6.53
6	TOTAL.....		3.18	7.52	12.35	23.32	36.61	39.18

402-403 EVACUATION, REPLACEMENTS, AND PRISONERS OF WAR

402 METHOD OF COMPUTING NUMBER OF BEDS REQUIRED:

f. Bed requirements in the Zone of Interior (Continued):

(3) To the above figure must be added an allowance when appropriate, for care of other *United States Armed forces, i.e. Navy or Marines, for Allied military personnel, for civilians, and for prisoners of war.* The additional number of fixed beds for such purposes will depend upon the particular area involved and no definite figures can be given. It is also necessary to bear in mind that the actual evacuation of patients depends upon the transportation available. Experience in this war indicates that an additional allowance should be made for the fact that some patients who are to be evacuated to the zone of interior will still be in the theater after 120 days.

■ 403. MAXIMUM CAPACITY OF MEANS OF TRANSPORTATION FOR CASUALTIES:

1	2	3	4	5
	Vehicle	Men		
		Sitting	Recumbent	Average
2	Transport airplane (C-47).....	27	18	21
3	Ambulance, animal-drawn.....	8	4	6
4	Ambulance, motor, field.....	10	4	6
5	Ambulance, cross-country.....	6	4	5
6	Half-Track.....	4	4	4
7	Truck, 1/4-ton.....	2	2	2
8	Truck, 3/4-ton.....		5	5
9	Truck, 1 1/2-ton.....	10	10	10
10	Truck, 2 1/2-ton.....	16	18	17
11	Truck, 2 1/2-ton, amphibian.....	11	6	9
12	Railway car, coach.....	88		
13	Pullman car — 12 section.....	48	24	36
14	16 section.....	64	32	48
15	Hospital train.....	700	300	500
	Ambulance, veterinary—			
16	Trailer, 2-horse van.....			2
17	Truck, 2 1/2-ton, stock rack body.....			6
18	Stock car.....			18
19	Box car.....			18
20	Veterinary lead line.....			20

■ 404. TIME ELEMENT OF EVACUATION:

a. *Personnel:*

For round trip evacuation (including loading and unloading):

Litter squads: 1,000 yards each way in one hour

Wheeled litters: 1,250 yards each way in one hour

Ambulance, animal-drawn: 2 miles in one hour

Ambulance, motor, during combat in division area: 5 miles each way in one hour.

b. *Animals:*

For round trip evacuation (including tying and untying):

Lead line: 2,000 yards each way in one hour.

c. To calculate the time required for evacuation of casualties from the field, or the number of ambulances required to evacuate casualties in a given time, use the following formulae:

W = number of casualties

t = time required for round trip

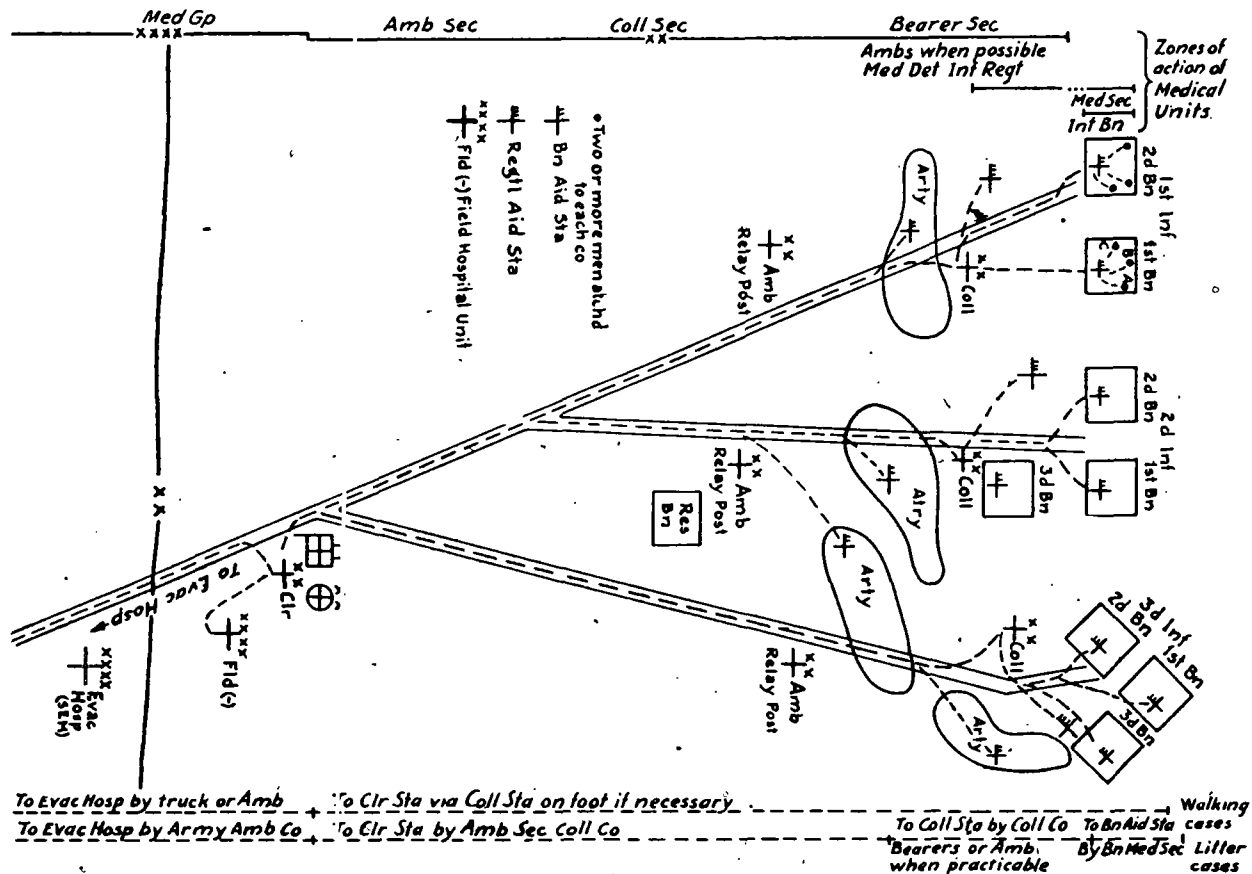
M = number of vehicles or litters

N = number of patients per load

T = time required or allowed

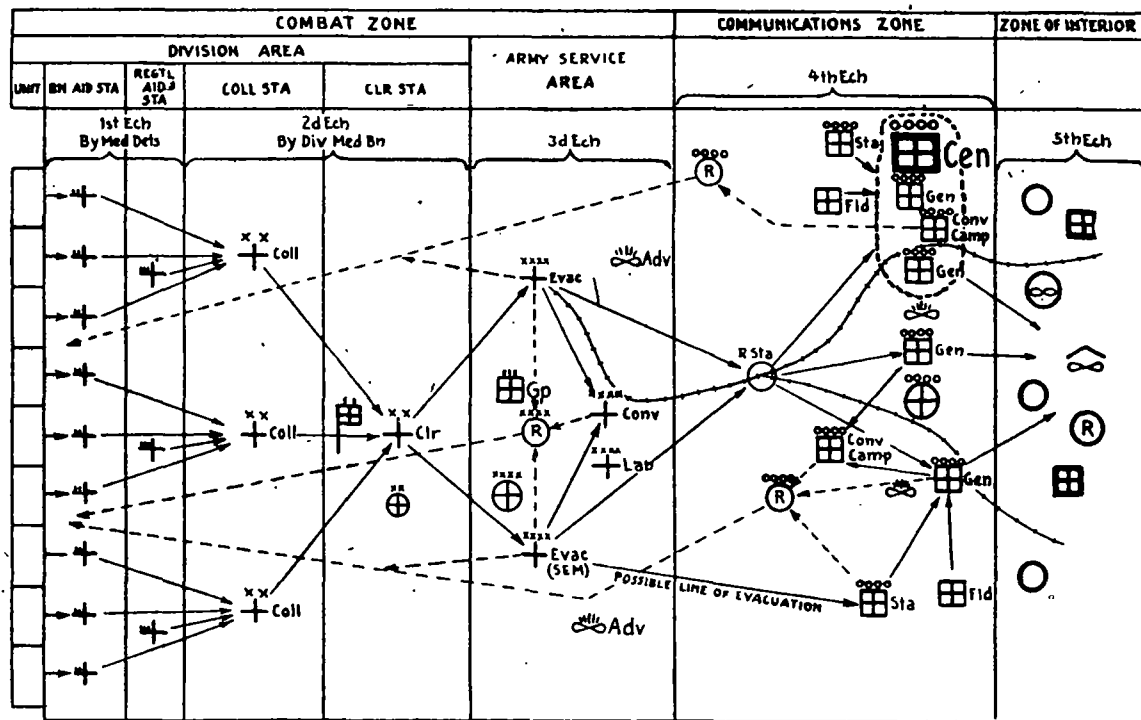
$$T = \frac{W \times t}{M \times N} \quad M = \frac{W \times t}{T \times N}$$

■ 405. DIAGRAM OF MEDICAL SERVICE OF AN INFANTRY DIVISION:

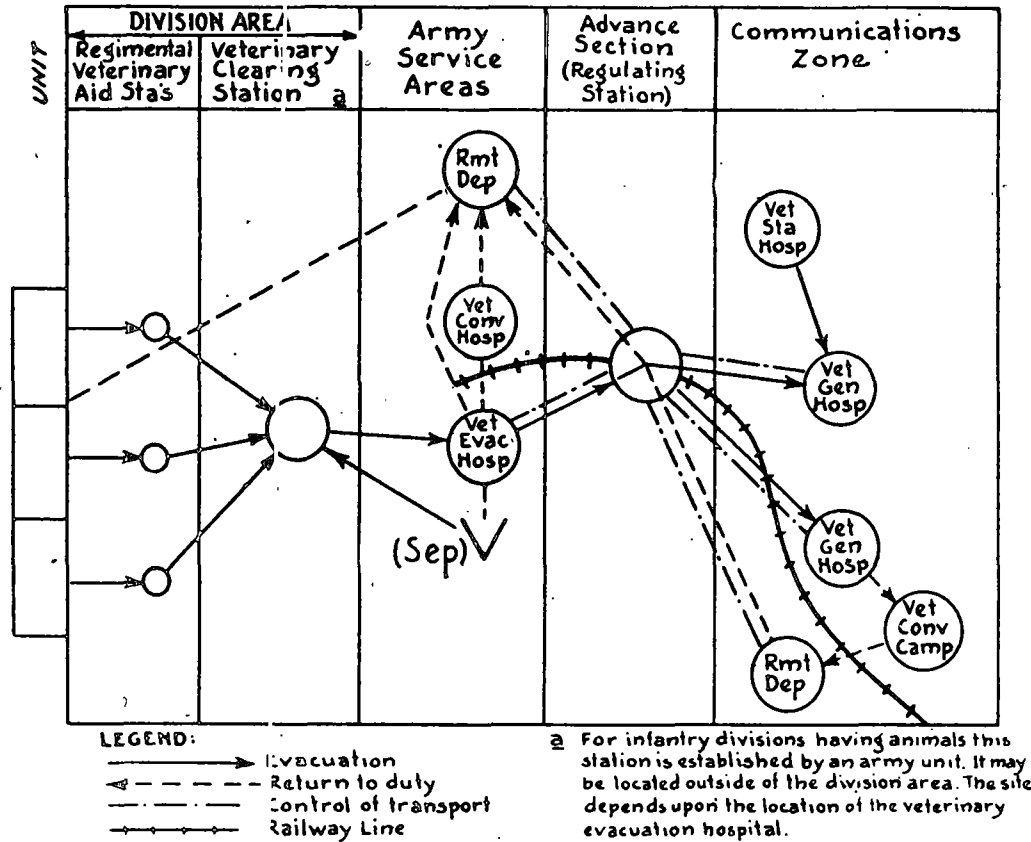


■ 406. DIAGRAM OF EVACUATION AND HOSPITALIZATION OF PERSONNEL:

←—THEATER OF OPERATIONS—→



■ 407. DIAGRAM OF EVACUATION AND HOSPITALIZATION OF ANIMALS:





■ 408. ESTIMATED DAILY LOSSES IN CAMPAIGN OF PERSONNEL AND ANIMALS, DEAD AND EVACUATED; AND IN MOTOR VEHICLES DESTROYED AND EVACUATED; PER 1,000 OF ACTUAL STRENGTH:

	1	2	3	4	5	6 ⁽¹⁾	7	8	9 ⁽¹⁾	10	11	12 ⁽¹⁾
1	General type of operations for the forces as a whole	Men										
		Infantry regiment		Front-line division			Corps and Army troops (except cavalry)			Combat troops in corps and army reserve		
		Dead	To Ctr Sta	Dead	To Evac Hosp	To Gen Hosp ⁽²⁾	Dead	To Evac Hosp	To Gen Hosp ⁽²⁾	Dead	To Evac Hosp	To Gen Hosp ⁽²⁾
2	Covering and security force action.....	6.0	30.0	2.0	12.0	10.0	0.2	6.2	4.3	0.1	5.6	3.9
3	Attack											
4	Meeting engagement.....	16.0	80.0	6.0	32.0	27.0	0.6	8.0	5.6	0.3	6.5	4.5
5	of a position—First day..	25.0	125.0	10.0	50.0	42.0	1.0	10.0	7.0	0.5	7.5	5.3
6	Succeeding days.....	12.0	62.0	5.0	25.0	21.0	0.5	7.5	5.2	0.3	6.3	4.4
7	of a Zone—First day.....	42.0	210.0	17.0	84.0	70.0	1.6	13.4	9.4	0.8	9.2	6.4
	Succeeding days.....	21.0	105.0	8.0	42.0	35.0	0.8	9.0	6.3	0.4	7.0	4.9
8	Defense											
9	Meeting engagement.....	10.0	50.0	4.0	20.0	17.0	0.4	6.2	4.3	0.2	5.6	3.9
10	of a position—First day..	15.0	60.0	6.0	24.0	23.0	0.5	7.5	5.2	0.3	6.3	4.4
11	Succeeding days.....	7.5	30.0	3.0	12.0	11.5	0.3	5.7	3.9	0.15	4.8	3.3
12	of a Zone—First day.....	25.0	100.0	10.0	40.0	36.0	1.0	9.0	6.3	0.5	7.0	4.9
13	Succeeding days.....	12.5	50.0	5.0	20.0	18.0	0.5	6.6	4.8	0.25	5.3	3.6
	Inactive situations ³	5.0	20.0	2.0	8.0	7.0	0.2	6.0	4.2	0.1	5.5	3.9
14	Pursuit.....	8.0	42.0	3.0	17.0	14.0	0.3	6.5	4.5	0.2	5.8	4.1
15	Retirement and delaying action.....	4.0	20.0	2.0	8.0	7.0	0.2	6.0	4.2	0.1	5.5	3.9
16	Under all other conditions of campaign	Under conditions of campaign not enumerated above, casualty rates for men will be approximately the same for all troops. The following rates will be assumed: Dead, negligible; evacuation from clearing stations to evacuation hospitals, 2.5 per 1,000; from evacuation hospitals to general hospitals, 1.5 per 1,000. ¹										

¹ Columns 6, 9, 12, 15 and 20 are included in columns 5, 8, 11, 14 and 19 respectively.

² For the independent corps: disregard columns headed "To Gen Hosp" and assume all patients in evacuation hospitals must be evacuated to general hospitals.

³ Repairs by unit maintenance sections.

⁴ Repairs by 3d echelon—or higher.

⁵ Forces in contact, neither side attacking.

ESTIMATED DAILY LOSSES IN CAMPAIGN OF PERSONNEL AND ANIMALS, DEAD AND EVACUATED; AND IN MOTOR VEHICLES DESTROYED AND EVACUATED; PER 1,000 OF ACTUAL STRENGTH (Continued) :

	13	14	(1) 15	16	17	18	19	(1) 20	21	22	23
	<i>Men (Contd):</i>			<i>Animals</i>					<i>Motor Vehicles</i>		
	<i>Attached cavalry including reinforcements</i>			<i>Artillery regiment (horse-drawn)</i>		<i>Attached cavalry including reinforcements</i>			<i>Front-line division</i>		
1	<i>Dead</i>	<i>To Evac Hosp</i>	<i>To Gen Hosp (2)</i>	<i>Dead</i>	<i>To Vet Aid Sta</i>	<i>Dead</i>	<i>To Evac Hosp</i>	<i>To Gen Hosp (2)</i>	<i>Destroyed</i>	<i>2d Ech (2)</i>	<i>3d Ech (2)</i>
2	0.4	12.5	8.5	6.0	7.0	1.5	12.0	2.0	5.0	5.0	7.0
3	1.2	16.0	11.0	16.0	20.0	5.0	16.0	2.0	10.0	10.0	9.0
4	2.0	20.0	14.0	25.0	31.0	8.0	20.0	3.0	16.0	15.0	11.0
5	1.0	15.0	10.4	12.0	15.0	4.0	15.0	2.0	13.0	7.0	8.0
6	3.2	27.0	19.0	42.0	55.0	13.0	27.0	4.0	27.0	27.0	15.0
7	1.6	18.0	12.5	21.0	26.0	7.0	18.0	3.0	14.0	13.0	10.0
8	0.8	12.5	8.5	10.0	12.0	3.0	12.0	2.0	6.0	6.0	7.0
9	1.0	15.0	10.0	15.0	15.0	4.0	15.0	2.0	9.0	75.0	7.0
10	0.6	11.0	8.0	7.0	7.0	2.0	11.0	2.0	8.0	6.0	7.0
11	2.0	18.0	12.5	25.0	25.0	8.0	18.0	3.0	16.0	12.0	10.0
12	1.0	13.0	9.5	12.0	12.0	4.0	13.0	2.0	8.0	6.0	7.0
13	0.4	12.0	8.5	5.0	5.0	1.5	12.0	2.0	3.0	2.0	6.0
14	0.6	13.0	9.0	8.0	10.0	2.5	13.0	2.0	5.0	5.0	7.0
15	0.4	12.0	8.5	4.0	5.0	1.5	12.0	2.0	3.0	3.0	6.0
16	For animals: Dead, negligible; evacuation from veterinary aid stations to evacuation hospitals, 1.25 per 1,000; from evacuation hospitals to general hospitals, 0.1 per 1,000 ¹								Negligible	2.0	1.



SECTION II

REPLACEMENTS AND LOSSES

■ 409. THEATER REPLACEMENT SYSTEMS.

a. The theater commander anticipates his replacement requirements and obtains ground and service force replacements through submission of a bulk requisition to the War Department.

The War Department approves the bulk requisition and has the replacements furnished by replacement depots in the zone of interior. Non-flying air force replacements are requisitioned separately with the specification serial numbers given. Combat crews are not requisitioned. They are forwarded automatically from the zone of interior to the theater at a predetermined monthly rate of replacement set up in War Department schedules.

Subordinate units in the theaters also make informal replacement studies and estimates, but they requisition replacements only for actual losses suffered.

b. Definitions.

(1) *Replacements*.—A *Replacement* is an officer or enlisted person needed to fill a shortage in the authorized strength of a unit or allotment approved by the War Department. (Such replacements do not include "Fillers" for authorized units or allotments, "Rotational Personnel" or personnel transferred or on detached service remaining in the theater.)

(2) *Fillers*.—A *Filler* is a person required *initially* to bring a unit or an approved allotment to authorized strength.

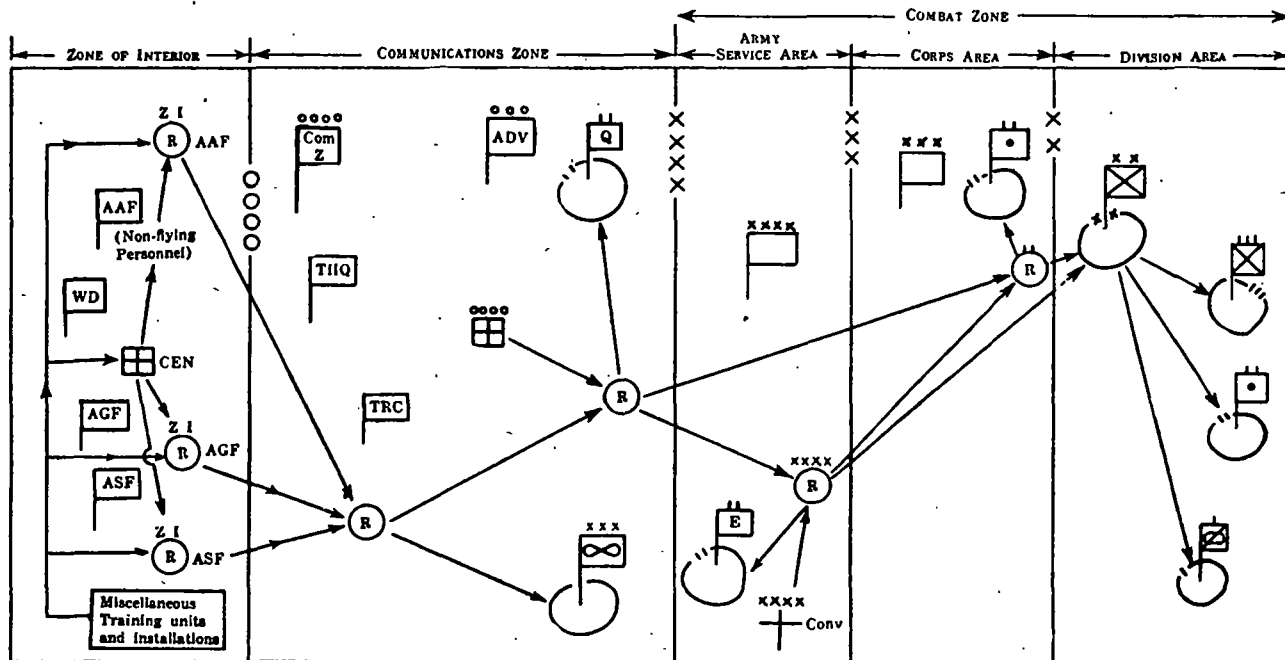
(3) *Rotational Personnel*.—*Rotational personnel* are officers or enlisted men or women (*in specified grades*) shipped to and from an oversea theater under "rotational policy." They are distinct from *both* replacements and fillers.

c. The Replacement System, like the supply system, is echeloned in depth. The Replacement system is shown diagrammatically in Par 410.

d. Daily loss rates are shown in Par 411. The cumulative loss for any period is obtained by selecting the proper daily loss rate, multiplying it by the proper factor from Par 412, and multiplying this product by the strength of the command in thousands. (This cumulative loss is the *net* loss; hospital admissions returned to duty have been deducted.) See Par 413 for an illustrative example. The anticipated losses in manpower, as thus determined, may be used by the theater commander as a basis for requisitions on the zone of interior for replacements.

410. PERSONNEL REPLACEMENT SYSTEM (Continued):

b. Flow of Replacements:



→ Flow of Replacements

- Z I
- (R) Zone of Interior Replacement Depot
- (R) Theater Replacement Depot

- (R) Replacement Depot (Army)
- (R) Replacement Battalion
- ⊞ Hospital or Rehabilitation Center

NOTE: Replacements are normally delivered to the rail or truckhead which serves the unit for which the replacements are intended, or to the rear echelon of that unit.

THEATER LOSSES

■ 411. DAILY RATES OF LOSSES.—*a. Daily loss rate by persons per 1,000 persons, theater of operations (except Air Force):*

(1) Disease and non-battle injuries:

- | | |
|--|-------------------|
| (a) Temperate and arctic zones, favorable conditions | about 2.0 persons |
| (b) Temperate and arctic zones, unfavorable conditions | about 3.0 persons |
| (c) Tropical zone, favorable conditions | about 2.5 persons |
| (d) Tropical zone, unfavorable conditions | about 5.0 persons |

(2) Gas injuries:

- | | |
|-------------------------|--------------------|
| (a) Major warfare | about 0.25 persons |
| (b) Minor warfare | 0.00 persons |

(3) Gunshot injuries:

- | | |
|-------------------------|-------------------|
| (a) Major warfare | about 0.5 persons |
| (b) Minor warfare | about 0.3 persons |

(4) Captured and missing:

- | | |
|-------------------------|--------------------|
| (a) Major warfare | about 0.1 persons |
| (b) Minor warfare | about 0.03 persons |

b. Loss Rates, Air Forces (in percentage of strength of command):

- (1) Non-flying personnel.—Replacements required to take care of personnel attrition among non-flying personnel in any air unit, or in any of the units or Arms and Services assigned to the AF, should be computed at 1% per month of the total number of such personnel in the AF. (This percentage represents permanent losses to the units sustaining them. For average daily rate of noneffectives, see Par 401 b.)

- (2) Flying personnel (combat crews).—Use the following rates of losses for combat crews in an active theater of operations:

Losses of combat crews on combat missions per combat sortie.

Heavy bombers	4.0%
Medium bombers	2.0%
Light bombers	1.5%
Fighters	0.6%
Reconnaissance	1.0%

The ratio of total attrition to combat attrition (combat crews) may be computed at 1.2 to 1. Total attrition figures cover non-battle casualties, such as losses due to accidents during operational flights other than combat missions, non-battle injury, and sickness. They also include personnel removed to the zone of interior under rational policies.

411. DAILY RATES OF LOSSES (Continued) :

The casualty rates stated above are only a general guide. Actual casualty rates would be determined for each specific theater of operations and may vary widely with the theater and the experience and seasoning of the troops.

■ 412. FACTORS FOR USE IN CALCULATING ACCUMULATED LOSSES (less Air Corps).—Accumulated Loss Factors (based on a casualty rate of 1 person per 1000 persons per day).

a. When the evacuation policy (maximum period of non-effectiveness for patients who will be held in the theater for treatment) is 120 days:

120-Day Evacuation Policy

	1	2	3	4	5	6	7	8	9
1	IN THEATER OF OPERATIONS	PERIOD							
	Type of Loss	1 Day (¹)	30 Days (¹)	60 Days	90 Days	120 Days	150 Days	180 Days	360 Days
2	Disease and nonbattle injuries, including hospital cases, deaths, and admissions sent to the zone of interior.....	1.00	17.40	24.12	27.85	30.19	31.94	33.38	40.87
3	Poison gas injuries, including hospital cases, killed in action, died in hospital, and admissions sent to the zone of the interior.....	1.00	23.49	35.63	42.77	47.53	51.07	54.13	69.84
4	Gunshot injuries, including hospital cases, killed in action, died in hospital, and admissions sent to the zone of the interior.....	1.00	36.71	67.76	95.19	119.97	142.79	164.23	278.74
5	Captured and missing.....	1.00	21.00	42.00	63.00	84.00	105.00	126.00	252.00
	IN ZONE OF THE INTERIOR								
6	Disease and nonbattle injuries, deaths, and discharges in hospital for physical disability.....	1.00	13.88	18.21	20.97	23.08	24.85	26.44	35.03

¹Use the 1-day factor for periods of from 1 to 7 days, inclusive. For fractional periods of a month greater than 7 days, use the proportional part of the monthly factor, thus for 10 days, use 10/30 of the 30-day factor.

412 EVACUATION, REPLACEMENTS, AND PRISONERS OF WAR

412. FACTORS FOR USE IN CALCULATING ACCUMULATED LOSSES:

b. When the evacuation policy (maximum period of non-effectiveness for patients who will be held in theater for treatment) is 90 days:

90-Day Evacuation Policy

	1	2	3	4	5	6	7	8	9
1	IN THEATER OF OPERATIONS	PERIOD							
	Type of Loss	1 Day (1)	30 Days (1)	60 Days	90 Days	120 Days	150 Days	180 Days	360 Days
2	Disease and nonbattle injuries, including hospital cases, deaths, and admissions sent to the zone of interior.....	1.00	17.81	25.23	29.75	32.94	35.52	37.84	50.52
3	Poison gas injuries, including hospital cases, killed in action, died in hospital, and admissions sent to the zone of the interior.....	1.00	23.85	38.05	45.79	52.07	57.28	61.96	87.73
4	Gunshot injuries, including hospital cases, killed in action, died in hospital, and admissions sent to the zone of the interior.....	1.00	37.05	68.99	97.69	124.05	148.66	172.03	299.69
5	Captured and missing.....	1.00	21.00	42.00	63.00	84.00	105.00	126.00	252.00

¹Use the 1-day factor for periods of from 1 to 7 days, inclusive. For fractional periods of a month greater than 7 days, use the proportional part of the monthly factor, thus for 10 days, use 10/30 of the 30-day factor.

c. When the evacuation policy (maximum period of non-effectiveness for patients who will be held in theater for treatment) is 60 days:

60-Day Evacuation Policy

	1	2	3	4	5	6	7	8	9
1	IN THEATER OF OPERATIONS	PERIOD							
	Type of Loss	1 Day (1)	30 Days (1)	60 Days	90 Days	120 Days	150 Days	180 Days	360 Days
2	Disease and nonbattle injuries, including hospital cases, deaths, and admissions sent to the zone of interior.....	1.00	18.72	27.70	34.01	39.05	43.53	47.76	72.12
3	Poison gas injuries, including hospital cases, killed in action, died in hospital, and admissions sent to the zone of the interior.....	1.00	24.91	41.24	51.62	61.11	69.53	77.45	123.15
4	Gunshot injuries, including hospital cases, killed in action, died in hospital, and admissions sent to the zone of the interior.....	1.00	37.47	70.53	100.83	129.18	156.03	181.85	326.01
5	Captured and missing.....	1.00	21.00	42.00	63.00	84.00	105.00	126.00	252.00

¹Use the 1-day factor for periods of from 1 to 7 days, inclusive. For fractional periods of a month greater than 7 days, use the proportional part of the monthly factor, thus for 10 days, use 10/30 of the 30-day factor.

412. FACTORS FOR USE IN CALCULATING ACCUMULATED LOSSES:

d. When the evacuation policy (maximum period of non-effectiveness for patients who will be held in theater for treatment) is 30 days:

30-Day Evacuation Policy

	1	2	3	4	5	6	7	8	9
1	IN THEATER OF OPERATIONS	PERIOD							
	Type of Loss	1 Day (¹)	30 Days (¹)	60 Days	90 Days	120 Days	150 Days	180 Days	360 Days
2	Disease and nonbattle injuries, including hospital cases, deaths, and admissions sent to the zone of interior.....	1.00	20.89	33.58	44.11	53.55	62.50	71.30	132.27
3	Poison gas injuries, including hospital cases, killed in action, died in hospital, and admissions sent to the zone of the interior.....	1.00	27.04	48.28	65.02	81.16	96.69	111.81	201.68
4	Gunshot injuries, including hospital cases, killed in action, died in hospital, and admissions sent to the zone of the interior.....	1.00	38.37	73.82	107.58	140.15	171.82	202.87	382.42
5	Captured and missing.....	1.00	21.00	42.00	63.00	84.00	105.00	126.00	252.00

¹ Use the 1-day factor for periods of from 1 to 7 days, inclusive. For fractional periods of a month greater than 7 days, use the proportional part of the monthly factor, thus for 10 days, use 10/30 of the 30-day factor.

413. COMPUTATION OF LOSSES:

a. Method of using data in Pars 411 and 412: The tabulations set forth are for daily loss of 1 per thousand persons per day in each type of loss. With these tablets (the losses to be expected in any operation may be computed as follows:

(1) From Par 411 select the applicable daily loss rate.

(2) In Par 412 the evacuation policy determines the subparagraph to be used (120 day, 90 day, etc.). In each subparagraph the period of time over which losses are being calculated determines the vertical column to be used (30 day, 60 day, . . . 360 day). From the proper column select the loss factor opposite the type of loss under consideration. Multiply this factor by the appropriate daily loss rate per 1000 persons from Par 411.

(3) Multiply the product thus obtained by the number of thousands in the strength of the command. This result is the accumulated loss for the type of loss and period under consideration.

(4) Proceed similarly for the other type losses.

(5) Add the accumulated losses of the various types.

413. COMPUTATION OF LOSSES (Continued):

b. Example: Required the estimated number of replacements needed to replace losses for *30 days* for a force consisting of 500,000, including 10,000 Air Force with 1,000 in combat crews, initially operating in a *major* theater of operations, in the *temperate* zone, under *favorable* conditions, when the evacuation policy in the theater of operations is *120 days*.

Losses except Air Force:

	Daily loss rate	Loss Factor	Strength (thousands)	
(1) Disease and nonbattle injuries:	2.00	17.40	490	= 17,052
(2) Gas injuries: -----	0.25	23.49	490	= 2,878
(3) Gunshot injuries: -----	0.5	36.71	490	= 8,994
(4) Captured and missing: -----	0.1	21	490	= 1,029
Total -----				29,953

Losses, Air Force: (See Par 411b, above and Chapter 4, Section I, AF Manual 65-1.)

(1) Non-flying personnel.—9,000 × .01 -----	= 90
(2) Flying personnel (based on 2 Bomb Groups, 48 Acft each, 10 members per Acft <i>plus</i> 2 Fighter Groups, 100 Acft each, 1 member per Acft)	
Bomb Gps — 10 (crew members × 96 (crews) × 5 (sortie rate) × .04 (loss per sortie) = -----	192
Fighter Gps — 200 (crews) × 15 (sortie rate) × .006 (loss per sortie) = -----	18
Combat attrition = -----	210
Non-combat attrition (1.2 to 1) × -----	1.2
Total combat & non-combat attrition = -----	252
Total losses, Air Force = -----	342

BATTLE LOSSES

■ 414. DISTRIBUTION OF BATTLE LOSSES—THEATER OF OPERATIONS (except Air Force):

a. *Distribution of Battle Losses by arms and services in percentages:*¹

	1	2	3	4	5	6
1	Arm or Service	Percentage of Battle Losses				
		Killed %	Wounded %	Missing %	PW %	Total %
2	Inf.....	13.3	49.2	2.8	10.6	75.9
3	FA.....	1.1	4.5	1.0	2.6	9.2
4	Engr.....	.8	2.7	.1	.9	4.5
5	MD.....	.6	2.0	.2	.6	3.4
6	Cav.....	.3	1.2	.1	.5	2.1
7	CAC.....	.4	1.2	.1	.2	1.9
8	Sig C.....	.2	.4	.0	.1	.7
9	QMC.....	.2	.4	.0	.0	.6
10	OD.....	.1	.3	.0	.0	.4
11	TC.....	.0	.2	.1	.0	.3
12	CWS.....	.0	.2	.0	.0	.2
13	MP.....	.0	.1	.0	.0	.1
14	Misc.....	.3	.3	.0	.1	.7
15	TOTAL.....	17.3	62.7	4.4	15.6	100.0

¹ The distribution set forth above is based on U. S. Army experience to date in the present conflict in all theaters (other than the Philippine Islands). The percentages must be modified in accordance with the strength and composition of our own and the enemy's forces, nature and location of the theater of operations, nature of the warfare, open or stabilized; degree of training; and morale.

Approximately six and one-half percent of the loss replacements are officers.

The above approximates 20% of total losses killed, 60% wounded, and 20% missing or PWs.

Distribution of non-battle losses is in direct proportion to percentage strength of each branch.

■ 415. ESTIMATE OF BATTLE LOSSES FOR A FRONT LINE DIVISION:

a. *Estimated Daily Combat Losses of Personnel in Percent (%) of Actual Strength:*

	1	2	3	4	5
1	General type of operations for the forces as a whole	Front-line division or similar unit			
		Dead %	Wounded %	Captured & Missing %	Total %
2	Covering and security force action.....	0.2	1.2	0.4	1.8
3	ATTACK:				
4	Meeting engagement.....	0.6	3.2	1.0	4.8
5	Of a position—First day.....	1.0	5.0	1.5	7.5
6	Succeeding days.....	0.5	2.5	0.8	3.8
7	Of a Zone—First Day.....	1.7	8.4	2.5	12.6
8	Succeeding days.....	0.8	4.2	1.3	6.3
9	DEFENSE:				
10	Meeting engagement.....	0.4	2.0	0.6	3.0
11	Of a position—First day.....	0.6	2.4	0.8	3.8
12	Succeeding days.....	0.3	1.2	0.4	1.9
13	Of a zone—First Day.....	1.0	4.0	1.3	6.3
14	Succeeding days.....	0.5	2.0	0.6	3.1
15	Inactive situations.....	0.2	0.8	0.3	1.3
16	Pursuit.....	0.3	1.7	0.5	2.5
17	Retirement and delaying action.....	0.2	0.8	0.3	1.3

b. Prior to deducting any of the above losses, assume an average of 5% of the command is continuously non-effective due to non-battle causes.

c. *Example.*—Calculate the losses for an infantry division for the first day and for the second day of an attack of a position and indicate the distribution of the losses. The current aggregate strength of the division is assumed as 12,531.

(1) *First Day Losses:*

- (a) Non-effective due to non-battle causes:
5% of 12,531 or ----- 627
- (b) Effective strength before the attack:
12,531 less 627 or ----- 11,904
- (c) Battle losses, first day, in attack of position:
7.5% of 11,904 or ----- 893
- (d) Effective strength, end of first day:
11,904 less 893 or ----- 11,011

ESTIMATE OF BATTLE LOSSES FOR A FRONT LINE DIVISION (Continued) :

(2) *Second Day Losses:*

(a) Effective strength, beginning of second day: -----	11,011
(b) Battle losses, second day, in attack of position:	
3.8% of 11,011 or -----	418
(c) Effective strength, end of second day:	
11,011 less 418 or -----	10,593

(3) *Distribution of Battle Losses, First Day:*

Dead -----	1.0% of 11,904 or	119
Wounded -----	5.0% of 11,904 or	595
Captured and missing -----	1.5% of 11,904 or	179
Totals -----	7.5%	893

(4) *Distribution of Battle Losses, Second Day:*

Dead -----	0.5% of 11,011 or	55
Wounded -----	2.5% of 11,011 or	275
Captured & missing -----	0.8% of 11,011 or	88
Totals -----	3.8%	418

(5) *Total Battle Losses for both days:*

Dead -----	119 plus 55 or	174
Wounded -----	595 plus 275 or	870
Captured and missing -----	179 plus 88 or	267
Total -----		1311

(6) The loss in infantry units is approximately:

75.9% of 1311 or -----	995
------------------------	-----

(7) The loss per infantry regiment is approximately:

One-third of 995 or -----	332
---------------------------	-----

(8) The loss of *officers* in the infantry regiment is approximately:

6.5% of 332 or -----	22
----------------------	----

(9) Other losses may be similarly estimated.



SECTION III

PRISONERS OF WAR

■ 416. **ESTIMATE OF PRISONERS OF WAR.**—*a. General:* In order that the necessary arrangements may be made for the care, reception and disposition of prisoners of war, it will be necessary to estimate the number of prisoners that will probably be captured over a period of time or for a specific operation. Factors to be considered in preparing such an estimate include the following:

- (1) Enemy morale.
- (2) Avenues of withdrawal open to the enemy.
- (3) Ability of our own forces to encircle or cut off enemy units.
- (4) Type of warfare in which forces are engaged; i.e., position warfare, war of movement.
- (5) Relative strength of opposing forces.

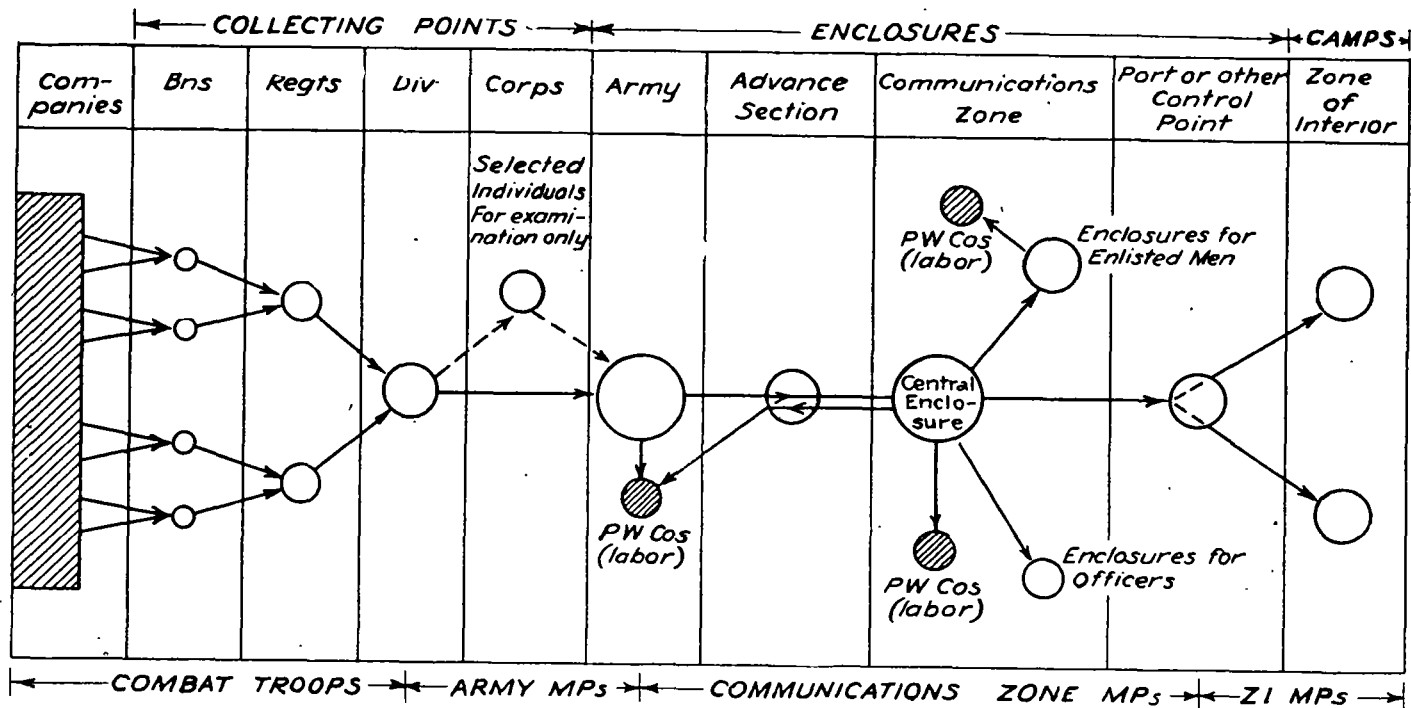
b. Theater Estimates: For overall estimates on a theater level, the following factor may be used. In a major war, the average daily rate for captured and missing may be estimated at approximately 0.1 per 1,000. Hence for an enemy force of 1,000,000 the average daily number of prisoners captured may be estimated at 100. As prisoners are not captured at a uniform rate, special preparations must be made for the reception of unusual numbers when theater plans contemplate decisive action, such as cutting routes of withdrawal or driving the enemy against an obstacle.

c. Division and Corps Estimates: For estimates by divisions (or task forces) the following figures are averages, based on experiences of some U. S. divisions against veteran Axis troops. In these instances, U. S. forces were numerically superior by about two to one.

By a division in attack of a defensive position.....	50 per day
By a division in attack of a defensive position preceded by night approach and with complete surprise obtained.....	700 per day
By an armored task force in an encirclement operation	1,000 per day
By a division in defense of a position against an unsuccessful attack.....	300 per day
By a corps in an action of 25 days against a determined enemy.....	4,680 in 25 days
(Expressed as an average number of prisoners per corps per day.).....	187 per day
(Expressed as an average number of prisoners per division per day.).....	47 per day

d. Equal Force Estimates: When the opposing forces are approximately equal in number and tactical dispositions, the number of prisoners taken should average the data given in Pars 411a (4), 412 line 5, and 414a column 5.

■ 417. DIAGRAM OF EVACUATION OF PRISONERS OF WAR:



Chapter 5

MILITARY MAPS

	Paragraph
Responsibility -----	501
Classification -----	502
Types of Maps -----	503
Engineer Mapping Troops -----	504
AAF Photographic Troops -----	505
Map Distribution -----	506
Initial Allowance of Maps -----	507
Coordinate Systems -----	508
References -----	509

MILITARY MAPS

■ 501. RESPONSIBILITY FOR MAPS AND MAPPING:

<i>Individual or agency</i>	<i>Duties</i>
Commander of unit	Advance planning, which is necessary if mapping situation is to keep ahead of the tactical situation. Good maps will seldom be on hand without special command effort.
G-2 in divisions and larger units	Preparation of plans and policies and supervision of all activities concerning military topographic surveys and maps, including their acquisition, reproduction, and distribution.
Corps of Engineers	Prosecution of surveys, photogrammetric processes or compilations for the production or revision of maps required for military purposes. Map reproduction, supply, and distribution.
Army Air Forces	Supply and distribution of aeronautical charts. Aerial photographic work for: Military mapping operations in accordance with specifications prepared by Corps of Engineers, and Photography to meet intelligence needs of combat troops.

■ 502. CLASSIFICATION OF MAPS.—*a. According to scale:*

- (1) *Small scale*—smaller than 1/1,000,000.
- (2) *Medium scale*—1/125,000, exclusive, to 1/1,000,000.
- (3) *Large scale*—1/100,000 to 1/10,000.

b. Military classification:

- (1) *General*—Maps of small scale for general planning purposes.
- (2) *Strategic and road*—Maps of medium scale for planning operations including the movement, concentration, and supply of troops (strategic and logistic purposes).
- (3) *Tactical and special*—Maps of large scale for tactical and administrative purposes.

c. General classification:

- (1) *Topographic map*—A map which presents relief or the vertical position of features in measurable form as well as their horizontal position.
- (2) *Planimetric map*—A map presenting the horizontal position of features.
- (3) *Photomap*—A reproduction of a photograph or mosaic upon which grid lines, marginal data, and place names may be added.

502. CLASSIFICATION OF MAPS:

d. Aeronautical charts—Classified as follows:

- (1) *Planning charts*—World coverage charts, scale 1/5,000,000 used for route planning and control of tactical movements and developments.
- (2) *Long range air navigation charts*—World coverage charts, scales 1/3,000,000 and 1/1,000,000, used for celestial air navigation.
- (3) *Pilotage charts*—Charts covering land areas, scale 1/1,000,000 and 1/500,000, showing sufficient topographical detail, color scheme and pattern arrangement required for accurate contact flying.
- (4) *Approach charts*—Charts, generally at scales 1/250,000 or 1/125,000, used by Air Forces in approaching objectives.
- (5) *Target charts*—Large scale schematic charts containing information necessary to distinguish assigned targets.

e. According to methods of reproduction:

- (1) *Lithograph*—Reproduced by lithography in one or more colors.
- (2) *Fluid duplicator*—Reproduced by dye printing process in one or more colors.
- (3) *Contact prints*—Reproduced by photographic methods. Includes black and white, blue, and brown prints.
- (4) *Mimeograph*—Reproduced by mimeograph or similar means in one color.
- (5) *Hectograph*—Reproduced by hectograph or similar means in one or more colors.

■ 503. TYPES OF MAPS AND PHOTOMAPS FOR THEATER OF OPERATIONS: 1 2 3

CHAPTER 5—PAGE 5

	1	2	3	4	5	6	7	8	9	10
	<i>Kind of map</i>	<i>Scale</i>	<i>Contour interval (feet)</i>	<i>Sheet size (inches)</i>	<i>Size of area</i>	<i>Purpose</i>	<i>Natural features and works of man shown</i>	<i>Originals and limited number of copies prepared by —</i>	<i>Reproduced in quantity by —</i>	<i>Probable time or conditions when available (*)</i>
1	Vertical aerial photograph	1:5,000 to 1:60,000 (12 inches = 1 mile to 1 inch = 1 mile)		Varies	Varies, depending on scale	Intelligence. Map supplement for study of terrain and other detail. Mosaics, preparation of stereo-pairs and triplets	Varies	Army Air Forces, Civilian agencies	Lithographic copies by base and army topographic battalions, and corps topographic companies. Contact prints 10 to 25 copies, by above units and army air force units	Limited numbers: 3 to 5 hours after photography. Quantities: 48 hours after photography *
2	Oblique aerial photograph	Varies		Varies	Varies, depending on scale	Intelligence. Map supplement for study of terrain and other detail	Varies	as above	as above	as above
3	Tri-metric photograph	Vertical: As taken Oblique: Varies		Max. of 19 by 20 to 22 by 29 depending on organization printing	Varies, depending on scale	Map supplement. Aeronautical chart production	Varies	as above	as above	as above

MILITARY MAPS

503. TYPES OF MAPS AND PHOTOMAPS FOR THEATER OF OPERATIONS (Continued) :

1	1	2	3	4	5	6	7	8	9	10
	<i>Kind of map</i>	<i>Scale</i>	<i>Contour interval (feet)</i>	<i>Sheet size (inches)</i>	<i>Size of area</i>	<i>Purpose</i>	<i>Natural features and works of man shown</i>	<i>Originals and limited number of copies prepared by —</i>	<i>Reproduced in quantity by —</i>	<i>Probable time or conditions when available (4)</i>
5	Photo-map	As taken, enlarged, or reduced. Generally approximately 1:20,000, 1:25,000, 1:62,500		Maximum of 19 by 20 to 22 by 29 depending on organization printing	Varies, depending on scale	General field uses as map supplement Limited horizontal control for unobserved artillery fire	Varies	Base and army topographic battalions. Corps topographic companies. Civilian agencies	Base and army topographic battalions. Corps topographic companies (Lithographic copies)	24 to 72 hours after photography, depending on amount of control used
6	Mosaic	As taken, enlarged, or reduced		Maximum of 19 by 20 to 22 by 29 depending on organization printing	Varies, depending on scale	General field uses as map supplement Approximate horizontal control for limited unobserved artillery fire	Varies	Army topographic battalions, Corps topographic companies, Civilian agencies Army Air Force units up to ten prints, when directed by proper authority	Army topographic battalions, Corps topographic companies (Lithographic copies)	24 to 47 hours after photography
7	Strip mosaic	As taken, enlarged, or reduced		Depends on number of photographs	Varies, depending on scale	General field use as map supplement Approximate horizontal control for limited unobserved artillery fire	Varies	Army Air Forces. Corps topographic companies Civilian agencies	Corps topographic companies (Lithographic copies)	24 hours after photography

503. TYPES OF MAPS AND PHOTOMAPS FOR THEATER OF OPERATIONS (Continued) :

	1	2	3	4	5	6	7	8	9	10
8	Strategic map of the United States	1:500,000 (1 inch = 8 miles)	100-1,000 (contours seldom shown)		4° latitude and longitude (215 by 280 miles)	Strategy and logistics	Drainage systems, water, and mountain ranges. Cities, rail lines and terminals, maintained water ways and airways and terminals, and roads of military importance	Corps of Engineers	Base reproduction plants	Reproductions: 24 hours
9	Topographic map, contoured, medium scale	1:250,000	Varies	17 by 19	Varies	Strategy and logistics	Stream lines, vegetation, and ground forms. Railroads, roads, towns, air fields, etc.	Corps of Engineers Governmental agencies	Base reproduction plants Base and army topographic battalions	Reproductions: 24 hours or more
10	Topographic map, contoured	1:100,000 or 1:125,000 (1 inch = 2 miles)	50	17 by 19	30' latitude and longitude	Substitute for 1:62,500 topographic map	Stream lines, vegetation, and ground forms. Railroads, roads, towns, air fields, etc.	Geological survey Corps of Engineers	Base reproduction plants Geological survey Base and army topographic battalions	Reproductions: 24 to 48 hours (limited areas of U.S.)
11	Topographic map, contoured (*)	1:62,500 (1 inch = 1 mile)	20	Maximum 19 by 22 (maximum impression 18 by 21)	15' latitude and longitude (25,000 by 30,000 yards)	General field uses Tactical and logistical studies by units from corps to regiment	Drainage systems, water, relief, and forested areas. Railroads, roads, bridges, dams, towns, buildings, etc.	Geological survey Corps of Engineers	Geological survey, Base reproduction plants Base and army topographic battalions	Reproductions: 24 to 48 hours (very limited areas of U.S.)

503. TYPES OF MAPS AND PHOTOMAPS FOR THEATER OF OPERATIONS (Continued) :

1	1	2	3	4	5	6	7	8	9	10
	<i>Kind of map</i>	<i>Scale</i>	<i>Contour interval (feet)</i>	<i>Sheet size (inches)</i>	<i>Size of area</i>	<i>Purpose</i>	<i>Natural features and works of man shown</i>	<i>Originals and limited number of copies prepared by —</i>	<i>Reproduced in quantity by —</i>	<i>Probable time or conditions when available (*)</i>
12	Coast charts and harbor charts	Miscellaneous		Varies	Varies, depending on scale	Coast artillery in harbor defense All arms in coastal frontier defense	Hydrography, stream lines, coast line Harbor, docks, aids to navigation, railroads, roads, towns, air fields, etc.	Coast and Geodetic Survey, U.S. Hydrographic Office, U.S. Lake Survey Office	Coast and Geodetic Survey Base reproduction plants. Base and army topographic battalions	Reproductions: 24 to 48 hours
13	Transportation maps	Miscellaneous; frequently 1:1,000,000	Contours seldom shown	Varies	Varies	Logistics, maintenance, and operation of communications	Roads and railroads. Drainage systems, water, etc.	Base plants, Civilian agencies, Public Roads Administration	Civilian agencies. Base reproduction plants. Base and army topographic battalions. Corps topographic companies	Reproductions: 24 hours or more
14	Road maps (civil)	Miscellaneous		Varies	Varies	Logistics. Concentration of mechanized units. Maintenance and operation of communication	Drainage systems, water, etc.	Civilian agencies	American Automobile Association, oil companies, etc.	Reproductions: 24 to 48 hours
15	Road maps (special military)	Miscellaneous; frequently 1:250,000		Varies	Varies	Mechanized and motorized units; convoys; individual drivers	Salient ground features. Drainage systems. Terrain difficult for tanks generally indicated	Base plants. All topographic units	Base plants. All topographic units	Reproductions: 24 to 48 hours

503. TYPES OF MAPS AND PHOTOMAPS FOR THEATER OF OPERATIONS (Continued) :

	1	2	3	4	5	6	7	8	9	10
16	Aeronautical charts, pilotage	1:1,000,000 and 1:500,000	Elevations shown by color gradients	Varies	Varies	Aerial navigation and as strategical map substitute	Stream lines and ground forms Railroads, roads, towns, air fields, and aids to aerial navigation	Coast and Geodetic Survey, U.S. Hydrographic Office Corps of Engineers	Coast and Geodetic Survey, U.S. Hydrographic Office Base reproduction plants	Reproductions: 24 to 48 hours
17	Aeronautical charts, approach	1:250,000 or or larger		14 by 17 or larger	Varies	Used by air forces in approaching objectives	Prominent features, roads, etc.	Air Force	Air Force	24 hours and up
18	Aeronautical charts, target	1:75,000 (varies)		14 by 17 or larger	Varies	Contain information necessary to distinguish assigned air targets	Prominent features, roads, etc.	Air Force	Air force	24 hours and up

NOTES

¹ The data as to existing maps contained in this table concern primarily the continental United States. Appropriate modifications are necessary in order to conform to conditions in other theaters of operations.

² Maps of foreign theaters, available for initial operations, will vary from direct one color reproductions of foreign maps without translation of names and symbols, to multi-color maps compiled in accordance with United States standards. Any of the maps listed herein may be issued in a hasty and less accurate form, in which case they are called Provisional Maps.

³ Topographic maps, scales 1:20,000 to 1:31,680 will be available for limited areas of vital importance of the United States and certain possessions. Normally maps of this character will not be available in other theaters of operation, unless prepared prior to outbreak of hostilities.

⁴ Time estimates are predicated upon adequately organized, equipped, and trained mapping (Army Air Force, Engineer) and reproduction (Engineer) troops. Under less favorable conditions more delay must be expected.

⁵ Under most favorable conditions, a single wet-print can be dropped within 30 minutes after photography, when the rapid type of photography is used, in which case no negative is available.

⁶ 5,000-yard grid lines overprinted, or shown by tick marks at edge of map.

■ 504. ENGINEER MAPPING TROOPS:

1	2	3	4	5
<i>Unit</i>	<i>Maps reproduced</i>	<i>Methods of reproduction</i>	<i>Sheet size (inches)</i>	<i>Remarks</i>
2 Engineer base topographic, battalion	Maps in large quantities Maps of permanent utility Special sketches and drawings Photomaps	Lithography in 1 or more colors Contact prints (limited numbers only) Duplicator (hectograph and similar means)	22" x 29" 	Battalion is prepared to take over and operate presses of larger sizes. Generally assigned long range mapping projects
3 Engineer topographic, battalion, army	Revision and reproduction of existing maps Provisional maps and photomaps of unmapped areas for tactical and fire-control use Sketches and drawings	Lithography in 1 or more colors Contact prints (limited numbers) Duplicator (hectograph and similar means)	20"x22½" 	Battalion organized for quantity reproduction to meet the more local reproduction needs of the army
4 Engineer topographic, company, corps	Revision and reproduction of existing maps Provisional and photomaps Mosaics Maps of limited areas Overprints, overlays, and sketches	Lithography in 1 color Contact prints (very limited numbers only) Duplicator (hectograph and similar means)	20"x22½" 	Multicolor reproduction possible in cases where exactness in matching color plates is not essential and time is available
5 Engineer aviation topographic organization	Same as engineer topographic company, corps, or engineer base, topographic battalion Revision of existing aeronautical charts, preparation of target charts	Same as engineer topographic company, corps or engineer topographic battalion	20"x22½" or 22 x 29	May be organized as Engr Avn Topo Co, Corps; or Engr Avn Topo Bn, to fit the need of the Air Force to which assigned. Equip and Orgn is same as for Engr Topo Co, Corps, or Engr Topo Bn, Army.
6 Division engineers	Simple sketches, overprints, and overlays	Duplicator (hectograph and similar means)	22" x 33"	Lithographic reproduction not possible

■ 505. ARMY AIR FORCE PHOTOGRAPHIC UNITS:

	1	2	3
1	Unit	Photographs furnished	Remarks
2	Photographic wing (T of Opns)	Specialized photography needed by topographic units for photogrammetry (multiple-lens or wide-angle single-lens type) Vertical and oblique photographs and mosaics for strategic purposes beyond the scope of tactical reconnaissance units	Wing may include mapping and charting squadrons Mapping photography ordinarily not suitable for intelligence purposes because of small scale and lack of detail. May contain important information, however, and prints should be made available to military intelligence officers for study
3	Tactical and Photo Reconnaissance Squadrons with Tactical Air Force	Photographs needed for intelligence or combat purposes (single photographs, vertical and oblique, stereopairs, night photographs)	Tactical reconnaissance capable of visual observation and photography—vertical and oblique. Photo Ren capable of large quantities of photographs—vertical and obliques

■ 506. MAP DISTRIBUTION IN THE FIELD:

	1	2	3
1	Organization or unit	Agency responsible for securing and issuing maps ¹	Agency from which maps are secured
2	THQ and THQ troops	Engineer—THQ ²	War Department, base topographic battalion, ² and base plants ²
3	Army	Army engineer ²	Army topographic battalion ² , and engineer, GHQ ²
4	Corps	Corps engineer ²	Corps topographic company ² , and army engineer ²
5	Division	Division engineer ²	Corps engineer ²
6	Regiment	Regimental S-2	Division engineer ^{2, 3}
7	Battalion ⁴	Battalion S-2	Regimental S-2 ³
8	Company ⁴	Company commander	Battalion S-2 ³

NOTES

¹ The distribution of confidential or secret maps will be governed by the provisions of AR 380-5.

² These agencies only are authorized to maintain stocks of maps. Maps are issued to G-2 for headquarters distribution.

³ Non-divisional units obtain maps from engineer or S-2 unit to which they are attached.

⁴ Applies similarly to squadrons, troops, or batteries.

■ 507. INITIAL ALLOWANCE OF MAPS.—a. Map allowances are based on the principles that each individual or organization have an adequate supply of maps to fulfill their needs without an excess. These needs will vary with the type of organization concerned and the operation in which it is, or expects to become involved. Over-all rate of advance controls the total requirement, although armored and other highly mobile forces need a proportionately larger supply of maps than slower moving units. The concentration of troops within a given area also influences map requirements. Map supply and distribution are based on the sectors assigned and the contemplated operations.

b. Initial allowances of maps are established by the theater commander on the advice and recommendations of the Assistant Chief of Staff, G-2, and the theater engineer. Total quantities may be based on the following rules, properly amended to cover the factors discussed above:

(1) *Selected tactical maps of any scale.*—One copy per officer, plus 50% for each headquarters.

(2) *Selected aeronautical charts of any scale.*—One copy per airplane, plus 50% for each headquarters.

(3) *Road maps or other maps to be used as road maps.*—One copy per roving vehicle. Roving vehicles may be estimated at 50% of all vehicles in the tactical command and 25% of all service units.

507. INITIAL ALLOWANCE OF MAPS:

*c. Basis of allowance:*¹

<i>Units</i>	<i>1/500,000 or smaller</i> ²	<i>Road Maps</i> ³	<i>1/50,000 to 1/250,000</i> ⁴	<i>1/20,000 1/25,000</i> ⁵	<i>Aero Charts</i>
HEADQUARTERS:					
THQ.....	200	150	100	20	100
Army.....	150	150	100	20	100
Armored Corps.....	120	130	200	30	75
Infantry Corps.....	80	100	150	20	50
Infantry Division.....	50	100	100	40	20
Airborne Division.....	50	100	100	40	20
Armored Division.....	20	50	200	200	20
Regiment.....	14	30	14	28	6
Battalion.....	0	10	12	12	2
Company.....	0	2	2	2	0
Air Force.....	50	50	30	0	100
Air Force Command.....	10	30	30	0	200
Wing.....	10	14	14	0	20
Group.....	10	14	14	0	20
Squadron.....	2	14	14	0	8
INDIVIDUAL:					
Officers.....	0	2	2	2	0
Vehicles.....	0	2	0	0	0
Airplanes.....	0	0	2	0	8 ⁷
SUMMARY OF TOTALS FOR HIGHER UNITS:					
Army Headquarters and troops.....	370	4600	5200	5200	260
Corps Headquarters and troops.....	270	1960	2200	2200	110
Infantry Division.....	110	1755	1980	1820	92
Armored Division.....	106	3200	2190	1445	40
Airborne Division.....	96	862	9640 ⁶	1142	72

¹ Numbers given are maximum number of copies of each map for initial issue to be used for planning purposes, and include a 100% reserve to be held under unit control. For normal operational issues, they may be safely reduced by 50%, and for short maneuvers by as much as 65% to 75%.

² Use most suitable map for general planning purposes, determined by size and type of unit using it.

³ If special road maps are not available, the general planning map at 1/500,000 or the smallest scale tactical map may be substituted.

⁴ Two scales within this limit are normally issued to a unit. For infantry units, this may be maps of 1/250,000 and 1/50,000, and for armored units maps of 1/250,000 and 1/100,000.

⁵ Use of this map should be limited to areas where positive need exists because of the character of the operations.

⁶ Production and distribution are AAF responsibilities. Normally, AAF distribution to ground and service troops is in bulk to zone of interior and communication zone map depots; and the Engineer makes detailed distribution.

⁷ Airplanes observing artillery fire will be issued same scale maps as used by artillery firing batteries.

⁸ The heavy issue to airborne divisions is to cover situations in which distribution to every participating individual is required. When acting as regular infantry, normal infantry division distribution is used.

■ 508. COORDINATE SYSTEMS.—*a.* There are several coordinate systems which are used to locate points or areas, either on a map or on the terrain. All of these systems may be divided into two general classes—relative and absolute. Relative coordinates are determined by reference to base points and directions local to some map and selected by some individual. Thus a point on the map may have any number of different coordinates depending upon the origin selected. Absolute coordinates are determined by reference to a permanent fixed base point and direction which have been officially adopted for that purpose.

b. Polar Coordinates.—The relative system of polar coordinates is used in designating points located with a compass in the field and in designating positions on maps not equipped with a grid. The coordinates consist of an angle from a given base direction and a distance from a given base position.

c. Rectangular Coordinates.—The relative system of rectangular coordinates is used in designating points on ungridded maps without the aid of a protractor. The coordinates consist of two distances measured at right angles from a base position. Variations of this system include:

(1) *Thrust Line.*—In this system a base line is established on the map or ground. Points are located by giving a distance along this line and another distance at right angles to the base line either to the right or left of the base line. This system is fully described in paragraph 22½, TB 21-25-1.

(2) *Map Template (Templet), M2.*—The Map Template, M2 is a transparent sheet, 8½ by 12¼ inches, used for locating points on gridded or ungridded maps or aerial photographs when secrecy is desired. This device is fully described in TB 21-26-1.

(3) *Point Designation Grid.*—The point designation grid is an arbitrary grid overprinted on photo maps. It may also be printed on a transparent template for use on photos without the grid. The grid is designed to have its two central lines, the AA line and the MM line, pass through the center of the photo. This system is fully described in paragraph 286 of FM 6-40, and in FM 21-26.

d. Geographic Coordinates.—The absolute system of geographic coordinates is used to designate points or areas on small scale maps and charts on which only the meridians of longitude and the parallels of latitude are shown.

e. Military Grid Coordinates.—Many countries have developed standardized systems of rectangular coordinates, the origins and base directions of which are officially adopted. The vertical (Y) grid line through the origin runs true north and south and the horizontal (X) grid line through the origin runs at right angles to the Y grid line. From the origin lines parallel to the Y and X lines are run at intervals of 1000 yards or 1000 meters, depending upon what system of measurement is used.

508. COORDINATE SYSTEMS:

(1) *U. S. Military Grid System.*—The system employed by our Army uses grid lines at intervals of 1000 yards. On smaller scale maps only the 5000 or even 10,000 yard grid lines may be printed. Regardless of grid spacing, grid coordinates are expressed by writing the X-coordinate first and the Y-coordinate last, with a dash between, and the whole inclosed within parentheses. In locating a point remember the key phrase "READ-RIGHT-UP." This system is fully described in FM 21-26.

(2) *British Grid System.*—The system employed by the British is based on a square of 500,000 meters on a side. A particular grid zone may have any number of these squares up to about twenty-five, arranged according to the general shape of the country, continent, or other large area to be gridded. Each of the squares in a grid zone is assigned a letter, the letters being alphabetical and reading from left to right and down within the zone. Each 500,000 meter square is further divided into 100,000 meter squares, each of which is also designated by a letter. Thus a 100,000 meter square of a zone may be identified by two letters. In giving the coordinates of a point or area the letter of the 100,000 meter square in which the area falls is first given. If necessary due to the small scale of the map, both the letter of the 100,000 meter square and of the 500,000 meter square are given. After the letter the coordinates are listed in the same order as in the U. S. grid system but *without* the dash between the X- and Y- coordinates. Example: J4572. The system is more fully explained in the Tentative Technical Manual "*Use of Foreign Maps.*" 5 Nov 42, and in FM 21-26.

(3) *Other Foreign Grid Systems.*—The Germans and the French have grid systems which, in general, are similar to the U. S. Military Grid System. Coordinates are read in the same manner as with the U. S. system, but the intervals between grid lines are in thousands of meters.

■ 509. REFERENCES.—Further details pertaining to military maps and mapping will be found in the following publications:

AR 300-15, Mapping and Charting.

FM 21-25, Elementary Map and Aerial Photograph Reading.

FM 21-26, Advanced Map and Aerial Photograph Reading.

FM 21-30, Conventional Signs, Military Symbols, and Abbreviations.

FM 30-20, Military Intelligence, Military Maps.

FM 30-21, Military Intelligence, Role of Aerial Photography.

FM 30-22, Military Intelligence, Foreign Conventional Signs and Symbols.

TM 5-240, Aerial Phototopography.

TM 5-245, Map Reproduction.

509. COORDINATE SYSTEMS (Continued) :

TM 5-246, Interpretation of Aerial Photographs.

TM 5-250, Use of Foreign Maps.

TC 25, 51, 1944.

Survey Staff Manual, ASF, Corps of Engineers.

P-3600—(5)

Chapter 6

CHARACTERISTICS OF MATERIEL

	Paragraph
Dimensions and weights—vehicles and weapons.....	601
Armament organic to combat vehicles.....	602
Characteristics of infantry weapons.....	603
Characteristics of field artillery weapons.....	604
Characteristics of antiaircraft artillery weapons	605
Characteristics of coast artillery weapons	606
Characteristics of chemical weapons	607
Characteristics of chemical agents	608
Data on chemical munitions	609
Chemical ammunition requirements	610
Capabilities of chemical battalions	611
Field artillery fires	612
Characteristics of landing craft	613
Characteristics of U. S. cargo ships	614
Weights and cubages of certain engineer equipment	615



■ 601. DIMENSIONS AND WEIGHT OF ITEMS OF EQUIPMENT: 1 2

a. Combat Vehicles:

	1	2	3	4	5	6	7	8	9	10
	Vehicle	Type of Body	Overall Dimensions (Inches)			Weight (Pounds)		Displacement		
			Length	Width	Reducible Height	Net	Gross	Square Feet	Cubic Feet	Ship Tons
1	Car	Armored, L, M8, 6x6.....	185	96	74	14,930	17,400	123	758	18.9
2		Armored, Utility, M20, 6x6.....	190	96	75	13,087	17,500	127	792	24.5
3		Half-track, M2.....	240	88	89	14,200	19,800	146	1,082	27.0
4		Half-track, M2, w/w.....	242	88	89	15,958	19,800	147	1,088	27.2
5		Half-track, M3.....	244	88	89	14,150	20,000	148	1,097	27.4
6		Half-track, M3, w/w.....	250	88	89	14,650	20,000	152	1,125	28.3
7		Half-track, M3A2.....	244	88	106	.....	21,200	148	1,306	32.7
8		Half-track, M5.....	243	88	91	15,400	20,500	148	1,122	28.0
9		Half-track, M5,w/w.....	250	88	91	15,900	18,900	153	1,158	28.9
10		Half-track, M9A1, w/roller.....	243	87	91	15,550	19,050	146	1,102	27.5
11		Scout, 4x4, M3A1.....	222	78	84	9,460	13,000	119	823	20.6
12	Carrier	Cargo, M30 (T14).....	238	105	102	.....	47,000	174	1,475	36.9
13		Mortar, M21, w/w.....	250	88	73	.....	18,500	153	928	23.2
14		Mortar, M4.....	241	88	89	14,700	17,400	146	1,084	27.1
15	Carriage, Motor	Gun, 76-mm, M18.....	209	110	102	34,673	40,000	160	1,345	33.6
16		Gun, 3-inch, M10.....	235	120	98	63,085	66,000	196	1,592	39.8
17		Gun, 3-inch, M10A1.....	235	120	98	95,239	64,000	196	1,592	39.8
18		Gun, 90-mm, M36.....	235	120	98	57,000	62,000	196	1,592	39.8
19		Gun, 155-mm, M12.....	265	105	96	55,934	58,000	193	1,546	38.6
20		Howitzer, 105-mm, M7.....	224	107	99	47,143	52,000	167	1,371	34.3
21		Howitzer, 75-mm, M8.....	175	90	106	31,985	34,580	109	954	23.9
22		Multiple Gun, M13, (AA).....	251	84	87	17,867	19,800	145	1,047	26.2
23		Multiple Gun, w/w, M14, (AA).....	248	87	91	16,800	19,200	149	1,132	28.3
24		Multiple Gun, M15A1, (AA).....	244	89	94	.....	20,800	150	1,172	29.3
25		Multiple Gun, w/w, M16, (AA).....	243	78	81	17,365	19,800	130	879	22.0

601. DIMENSIONS AND WEIGHT OF ITEMS OF EQUIPMENT: ^{1 2}

a. Combat Vehicles (Continued):

	1	2	3	4	5	6	7	8	9	10
	Vehicle	Type of Body	Overall Dimensions (Inches)			Weight (Pounds)		Displacement		
			Length	Width	Reducible Height	Net	Gross	Square Feet	Cubic Feet	Ship Tons
26	Tank	Light, M3A3.....	178	99	104	27,975	31,752	122	1,061	26.5
27		Light, M5.....	171	89	91	31,000	33,000	104	787	19.7
28		Light, M5A1.....	171	89	91	33,000	33,907	104	787	19.7
29		Light, M24.....	216	112	87	38,000	38,750	168	1,218	30.4
30		Medium, M4.....	230	103	118	64,270	66,500	164	1,617	40.4
31		Medium, M4 (105-mm How).....	232	103	116	62,250	66,500	166	1,604	40.1
32		Medium, M4A1 (75-mm Gun).....	230	102	112	62,110	66,500	163	1,520	38.0
33		Medium, M4A2 (75-mm Gun).....	234	103	117	67,520	69,000	167	1,631	40.8
34		Medium, M4A3.....	233	103	112	62,518	68,500	166	1,548	38.7
35		Medium, M4A4.....	242	103	118	67,890	71,000	173	1,701	42.5
36		Heavy, M6.....	277	123	123	120,000	126,500	237	2,425	60.6

b. Trucks:

1	Truck, ¼-ton	Command Reconnaissance.....	133	62	52	2,322	3,253	57	247	6.2
2		Amphibian	182	64	67	3,660	4,300	81	446	11.2
3	Truck, ¾-ton	Carryall, 4x4.....	185	78	81	5,750	7,550	100	667	16.7
4		Weapon Carrier, 4x4.....	167	83	82	5,250	7,050	96	655	16.4
5		Weapon Carrier, 4x4, w/w.....	177	83	82	5,550	7,350	102	692	17.3
6		Command Reconnaissance, 4x4.....	166	78	82	5,375	6,875	89	607	15.2
7		Command Reconnaissance, 4x4, w/w..	176	78	82	5,675	7,175	95	644	16.1
8	Truck, 1½-ton, 4x4	Auger, earth, motorized, M2.....	223	94	80	7,200	10,200	164	1,438	36.0
9		Panel delivery, K51.....	222	87	91	6,760	10,080	133	1,007	25.2
10		Tractor.....	206	86	87	6,065	10,885	123	893	22.3

601. DIMENSIONS AND WEIGHT OF ITEMS OF EQUIPMENT: ^{1 2}

b. Trucks (Continued):

	1	2	3	4	5	6	7	8	9	10
11	Truck, 1½-ton, 6x6	Cargo, w/w.....	225	83	86	7,125	10,125	129	920	23.0
12		Cargo, wo/w.....	215	83	86	6,675	9,673	124	881	22.0
13	Truck, 2½-ton	Amphibian	373	96	107	14,605	19,570	248	2,200	55.0
1		Apparatus, decontaminating, power-driven, M3A1.....	257	88	108	9,910	14,910	157	1,414	35.4
15		Cargo, C. O. E., 15' body.....	267	88	100	10,810	14,760	163	1,474	36.9
16		Cargo, 6x6, SWB.....	233	87	110	9,955	14,955	142	1,304	32.6
17		Cargo, 6x6, w/w, SWB.....	245	87	110	10,700	15,700	149	1,369	34.2
18		Cargo, 6x6, LWB.....	256	88	110	9,880	14,880	156	1,431	35.8
19		Cargo, 6x6, w/w, LWB.....	270	88	110	10,630	15,630	165	1,509	37.7
20		Cargo and Dump, 6x6, SWB.....	230	87	116	10,620	15,620	137	1,321	33.1
21		Compressor, air, truck-mounted.....	254	90	93	14,300	14,300	163	1,304	32.6
22		Dump, 6x6, w/w.....	240	88	92	10,760	15,760	146	1,113	27.8
23		Gasoline Tank, 6x6, 750-gal, LWB.....	254	91	88	10,340	15,450	160	1,164	29.1
24		Ordnance Maintenance, 6x6, w/o load.....	255	96	118	11,920	13,265	170	1,671	41.8
25		Repair 3.....	256	88	108	11,930	13,265	157	1,408	35.2
2		Shop, motorized ³	273	96	115	11,130	16,130	182	1,748	43.7
27		Surgical, 6x6.....	256	92	118	11,280	16,280	160	1,603	40.1
28		Tractor, 4x4, K53.....	201	93	104	10,000	15,000	129	1,105	27.6
29		Van, K60.....	254	94	118	11,070	15,070	165	1,626	40.7
30		Water Purification, 6x6.....	260	96	123	16,400	16,400	173	1,777	44.4
31	Truck, 4-ton, 6x6.	Cargo, SWB, w/w.....	269	96	100	16,960	26,400	179	1,491	37.3
32		Cargo, LWB, w/w.....	297	96	100	18,500	26,800	198	1,647	41.2
33		Wrecker, w/w.....	293	96	96	21,000	21,700	195	1,558	38.9
34	Truck, 4-, 5-ton, 4x4	Tractor, w/w.....	204	96	112	11,700	21,010	136	1,269	31.7
35	Truck, 5-, 6-ton, 4x4	Tractor, Ponton, C. O. E., w/w.....	297	98	113	16,580	27,120	201	1,891	47.3
36	Truck, 6-ton, 6x6	Prime mover, w/w.....	285	96	118	22,020	34,090	190	1,868	46.7
37		Bridge, construction (Treadway).....	370	100	108	26,500	38,500	257	2,311	57.8
38	Truck, 7½-ton, 6x6	Prime mover, w/w.....	297	103	122	29,620	44,620	210	2,140	53.5
39	Truck, 10-ton, 6x6	Heavy wrecker, M1.....	348	101	122	25,025	33,025	244	2,474	61.8

601. DIMENSIONS AND WEIGHT OF ITEMS OF EQUIPMENT: ^{1 2}

b. Trucks (Continued):

	1	2	3	4	5	6	7	8	9	10
	Vehicle	Type of Body	Overall Dimensions (Inches)			Weight (Pounds)		Displacement		
			Length	Width	Reducible Height	Net	Gross	Square Feet	Cubic Feet	Ship Tons
40	Truck, 40-ton, 6x6	Tank recovery vehicle, M2 (Truck-tractor, M26, only)*	300	136	116	48,000	103,000	283	2,739	68.5

c. Tractors:

1		Crawler-Type, 35DBHP, w/bulldozer	178	78	93		15,592	96	747	18.7
2		80-hp, D-7, w/bulldozer	246	146	122		36,050	249	2,537	63.4
3		113-hp, D-8	228	132	120		41,813	210	2,090	53.0
4		Medium, high speed, 18-ton, M4	206	97	99	30,910	31,400	139	1,145	28.6
5		Medium, high speed, 13-ton, M5	192	100	104	25,000	28,000	133	1,150	28.8

d. Miscellaneous Motor Vehicles:

1		Ambulance, $\frac{3}{4}$ -ton, 4x4	195	78	91	5,920	8,046	105	791	19.8
2		Crane, Truck-mounted, M2	406	108	131	53,500	54,760	304	3,313	82.8
3		Grader, road, Mtz, Diesel engine, 12' moldboard	304	96	91		23,750	203	1,536	38.4
4		Motorcycle, solo	88	37	41	537	837	22	76	1.9
5		Motorcycle, w/side car	98	89	44	850	1,250	60	220	5.5
6		Sedan, 5-passenger, light	196	73	70	3,275	4,075	99	572	14.3
7		Sedan, 5-passenger, medium	209	74	69	3,700	4,400	106	606	15.2
8		Shovel, crawler-mounted, $\frac{1}{2}$ -cu yd	283	96	189		40,555	189	2,971	74.3
9		Water supply set No. 2, mobile	260	96	123	16,400	20,100	174	1,777	45.0
10		Vehicle, Tank Recovery, M32	234	108	108	61,700	62,000	174	1,563	39.1

601. DIMENSIONS AND WEIGHT OF ITEMS OF EQUIPMENT: ^{1 2}*e. Semi-Trailers:*

	1	2	3	4	5	6	7	8	9	10
1	1½-ton	Van, K55 (Sig).....	296	95	115	8,200	12,700	195	1,860	46.5
2	6-ton, gross	Van.....	221	86	132	5,800	11,800	132	1,444	36.1
3	10-ton, gross	Laundry.....	269	96	132	8,000	20,000	179	1,973	49.3
4		Refrigerator.....	242	96	129	12,150	22,150	161	1,735	43.4
5		Sterilizer and Bath.....	270	94	139	9,500	21,500	175	2,017	50.4
6		Map Reproduction equipment.....	346	96	132		23,500	230	2,534	63.4
7	40-ton	Tank recovery vehicle, M52 (Semi-trailer, M15, only) ²	462	124	79	36,100	116,100	397	2,610	65.2

f. Trailers:

1	¼-ton, 2-wheel	Cargo.....	109	56	39	550	1,050	42	140	3.5
2		Telephone cable splicer, K38 (Sig).....	78	56	42	410	910	21	68	1.7
3	½-ton, 2-wheel	Van, public address.....	148	88	91	2,150	3,150	90	700	17.5
4	1-ton, 2-wheel	Cargo.....	146	72	73	1,300	3,470	72	439	11.0
5		Cargo, Armd, M8, w/coupling.....	119	89	53	2,858	5,058	73	317	7.9
6		Cargo, K52 (Sig).....	140	72	74	1,282	3,282	72	438	11.0
7		Communications, K19.....	255	84	103	5,385	7,385	149	1,276	31.9
8		250-gallon, water tank.....	137	72	58	1,390	3,390	67	326	8.2
9		Van, 2-horse.....	180	84	108	2,300	4,700	105	945	23.6
10		Ammunition, M10.....	140	82	58	2,090		80	385	9.6
11	1½-ton, 4-wheel	Communications Van, K35 (Sig).....	305	93	90	7,800	10,800	198	1,485	37.1
12	2-ton, 4-wheel	Smoke generator, M7.....	193	95	98	5,750	9,750	128	1,024	25.6
13	2½-ton, 2-wheel	Utility, pole type.....	225	85	43	2,460	7,460	133	469	11.7
14	5-ton, 2-wheel	Telephone construction, K37 (Sig).....	146	72	69	2,900	12,900	73	418	10.4
15	8-ton, 4-wheel	Full, low bed.....	300	102	57	9,990	25,990	170	825	20.6

601. DIMENSIONS AND WEIGHT OF ITEMS OF EQUIPMENT: ^{1 2}*f. Trailers (Continued) :*

	1	2	3	4	5	6	7	8	9	10
	Vehicle	Type of Body	Overall Dimensions (Inches)			Weight (Pounds)		Displacement		
			Length	Width	Reduc- ible Height	Net	Gross	Square Feet	Cubic Feet	Ship Tons
16	16-ton, 12-wheel	Full, low bed.....	346	102	60	15,330	55,330	193	967	24.2
17	20-ton, 12-wheel	Full, low bed.....	424	114	61	15,676	55,676	335	1,703	42.6
18	Miscellaneous	Searchlight trailer.....	176	91	110	5,180	9,180	111	1,012	25.3
19		Director, M9, trailer.....	192	96	100		9,160	128	1,066	26.7
20		Scraper, road, towed, 8-cu yd.....	355	118	119		15,104	291	2,884	72.1

g. Towed Weapons:

1		37-mm gun, AA, M3A1.....	241	70	72		6,124	116	698	17.4
2		37-mm gun, AT, M4A1.....	155	64	38		912	68	215	5.4
3		40-mm gun, AA, M2.....	226	72	80		5,850	113	753	18.8
4		57-mm gun, AT, M1A2.....	200	75	50		2,700	104	434	10.9
5		75-mm pack howitzer, M1A1.....	146	48	39		1,269	48	156	3.9
6		75-mm field howitzer, M3A3.....	155	68	44		2,089	73	269	6.7
7		3" gun, AA, M2.....	300	83	113		16,800	173	1,628	40.7
8		3" gun, AT, M6.....	278	86	59		4,875	164	807	20.2
9		105-mm howitzer, M2A2.....	238	82	60		4,615	135	677	16.9
10		105-mm howitzer, M3A1.....	155	68	44		2,495	73	267	6.7
11		90-mm gun, AA, M1A1.....	250	101	112		19,000	175	1,637	40.9
12		90-mm gun, AA, M2.....	355	103	121		32,300	254	2,560	64.0
13		90-mm gun, AT, T5E2.....	318	96	69		6,880	212	1,219	30.5
14		4.5" gun, M1.....	320	95	83		12,466	211	1,460	36.6
15		4.7" gun, AA, M1.....	369	124	124		61,500	316	3,207	80.2
16		155-mm howitzer, M1.....	288	95	81		11,966	190	1,283	32.1
17		155-mm gun, M1.....	412	99	102		30,600	283	2,408	60.2
18		8" howitzer, M1.....	480	99	103		31,700	330	2,812	70.3
19		240-mm howitzer, M1:								
20		Carriage vehicle.....	370	114	120		42,180	293	2,929	73.2
21		Cannon vehicle.....	398	108	84		39,695	297	2,080	52.0
22		4.5" rocket launcher.....	127	68	46	1,250	1,700	30	105	2.6

601. DIMENSIONS AND WEIGHT OF ITEMS OF EQUIPMENT: ^{1 2} (Continued) :

¹ Figures shown are for representative types of vehicles.
Various manufacturer's models vary slightly.

² Fractions of inch shown as next greater inch in all dimensions.

³ This chassis with different equipment is used for general purpose, electrical repair, light machine shop, small tool repair, tool and bench, and welding cargo. Used by Corps of Engineers..

⁴ Complete Tank Recovery Vehicle, M25 includes:
Truck-tractor, M26
Semitrailer, M15

■ 602. ARMAMENT ORGANIC TO COMBAT VEHICLES:

	1	2	3	4	5	6	7	8	9	10	11	12
1	Vehicle	Weapons										
		Cal. .30 MG	Cal. .50 MG	37-mm Gun	75-mm Gun ¹	75-mm How	76-mm Gun	3" Gun	90-mm Gun	2" Mortar M8	105-mm How	165-mm Gun
2	Car, armored, light, M8.....	1		1								
3	Car, armored, utility, M20 ²		1									
4	Car, half-track, M2.....	1	1									
5	Car, half-track, M3.....	1										
6	Car, half-track, M3A2 ²	1	1									
7	Car, half-track, M5A1.....	1	1									
8	Car, scout, M3A1.....	1	1									
9	Carriage, cargo, T14 ³		1									
10	Carriage, motor, 75-mm gun, M3.....				1							
11	Carriage, motor, 75-mm How, M8.....		1			1						
12	Carriage, motor, 76-mm gun, M18.....		1				1					
13	Carriage, motor, 3" gun, M10A1.....		1					1				
14	Carriage, motor, 81-mm mortar, M21.....		1							1 ^c		
15	Carriage, motor, 90-mm gun, M36.....		1						1			
16	Carriage, motor, 105-mm How, M7.....		1								1	
17	Carriage, motor, 155-mm gun, SP (M12).....											1
18	Carriage, motor, multiple gun, M15A1.....		2	1 ⁴								
19	Carriage, motor, multiple gun, M16.....		4 ⁴									
20	Carriage, trailer, MG, cal .50, M51.....		4									
21	Tank, light, T9E1 (AB).....	1		1								
22	Tank, light, M24.....	2	1		1					1		
23	Tank, medium, 75-mm gun, M4A3.....	2	1		1					1		
24	Tank, medium, 105-mm How, M4A3.....	2	1							1	1	
25	Tank, Heavy, M6.....	2	2	1				1				

¹ 75-mm guns are being replaced by 76-mm guns.

² Normally issued without armament. Armament included in T/E of organization to which vehicle is issued.

³ Ammunition carrier for Carriage, motor 155-mm gun, SP (M12).

⁴ Gun, AA, 37-mm, M1A2.

⁵ Turret-type guns (AA).

^c Includes 81-mm mortar.

603. CHARACTERISTICS OF INFANTRY WEAPONS:

	1	2	3	4	5	6	7	8	9
1	Weapon	Weight in firing position (pounds)	Method of operation	Type of feed	Maximum rate of fire (rounds per minute) (¹)	Sustained rate of fire (rounds per minute) (²)	Projectiles		
							Maximum range (yards)	Maximum effective range (yards)	Effective radius of burst —frag- mentation (yards)
2	Grenade, AT, M9A1.....	1.31			4		365 ³	365 ^{3 4}	10
3	Grenade, hand, fragmentation, MkIIA1..	1.31	(⁶)				35-40.	35-40	30 ⁶
4	Grenade, rifle, fragmentation, M-17.....	1.4 (Approx)			4	4	200 290 ³	200 ⁴ 290 ^{3 4}	3-5
5	Carbine, Cal .30 M-2..... With loaded magazine and sling.....	5.00 5.75	Gas Full auto- matic and semi- automa- tic	15-round magazine	30-40 750 ⁷	25	2,000	300	
6	Gun, machine, Browning, cal .30, M1917A1..... Gun & tripod, with water..... Gun & tripod, without water..... Tripod, M1917A1..... Chest with filled belt..... Spart parts chest, w/contents..... Water chest, full..... Water chest, empty.....	32.60 94.02 85.80 53.20 20.50 17-30 22-50 9.00	Recoil Auto- matic	250-round fabric belt	450-600	125	3,500 ⁸ 3,450 ⁹	1,800 2,800 ^{8 10}	
7	Gun, machine, Browning, cal .30 M1919A6 ¹¹ , (L), w/bipod and..... Shoulder stock..... Tripod, M2..... Pintle, elevating and traversing gear....	32-50 1.75 11.75 4.75	Recoil auto- matic	250-round fabric belt	400-450	60	3,500 ⁸ 3,450 ⁹	1,800 2,800 ^{8 10 12}	

603. CHARACTERISTICS OF INFANTRY WEAPONS (Continued):

1	2	3	4	5	6	7	8	9
Weapon	Weight in firing position (pounds)	Method of operation	Type of feed	Maximum rate of fire (rounds per minute) ⁽¹⁾	Sustained rate of fire (rounds per minute) ⁽²⁾	Projectiles		
						Maximum range (yards)	Maximum effective range (yards)	Effective radius of burst—fragmentation (yards)
8 Gun, machine, Browning, cal .50, M2, HB (flexible)..... Gun with tripod, M3.....	84.00 128.00	Recoil automatic	Metallic disintegrating link belt	450-575	125	7,200	1,800 1,200 ¹³	
9 Gun, 37-mm, M3, M3A1, gun & carriage, M4, M4A1.....	912	Manual, single shot	Hand, breech-loading	10-15	6-8	8,275 ¹⁴ 12,725 ¹⁵ 9,500 ¹⁶	400 ¹⁷	
10 Gun, 57-mm, M-1, gun and carriage (M-1, M1A1, M1A2, M1A3)..... M-2.....	2,750 2,915	Manual, single shot	Hand, breech-loading	10-15	6-8	9,275 ¹⁴ 13,555 ¹⁵ 12,670 ¹⁶	800 ¹⁷	10-15 ¹⁸ (Approx)
11 57-mm rifle.....	44.4	Manual, single shot	Hand, breech-loading	5-8	3	4,300 ¹⁸	4,300 ¹⁸	17 ¹⁸ (Approx)
12 Howitzer, 105-mm, M-3, with carriage, M-3, M3A1, M3A2 (without shield).... With shield.....	2,703 3,050	Manual, single shot	Hand, breech-loading	4	2	8,295	7,050	Lateral-50 Range -15
13 Mortar, 60-mm, M-2.....	42.00	Manual, single shot	Hand, muzzle-loading	30-35	18	1,985	(¹⁹)	17

603. CHARACTERISTICS OF INFANTRY WEAPONS (Continued) :

	1	2	3	4	5	6	7	8	9
14	Mortar, 81-mm, M-1.....	136	Manual, single shot	Hand, muzzle- loading	30-35	18	3,290 ²⁰ 2,560 ²¹ 2,470 ²²	(¹⁹)	25
15	Pistol, automatic, M1911A-1, with loaded magazine..... with empty magazine.....	2-80 2-44	Recoil, semi- auto- matic	7-round box magazine	21-28	10	1,600	50	
16	Rifle, automatic, Browning, cal .30, M1918, A-2, with sling..... Magazine, filled..... Magazine, empty.....	20.00 1.43 7 ounces	Gas, auto- matic	20-round box maga- zine	500-600 300-350 ²³	40-60	3,500 [*] 3,450 [*]	600 ^{*,*}	
17	Rifle, US cal .30, M-1, Rifle, w/o bayonet..... Rifle, with bayonet.....	9.50 10.50	Gas, semi- auto- matic	8-round clip	16-32	16	3,500 [*]	600 [*]	
18	Rifle, US cal .30, M-1C and M-1D (sniper's) (with telescope rifle sight, check pad and flash hider).....	11.81	Gas, semi- auto- matic	8-round clip	16-32	16	3,500 [*]	800-1,000	
19	Rifle, US cal .30, M1903A4.....	9.69	Manual	5-round clip	10-15	10	3,500 [*]	800-1,000	
20	Rocket launcher, AT, 2.36", M-18.....	9.50	Electrical impulse	Manual	4	4	650	400	10-15 ²⁴
21	Submachine gun, cal .45, M-3A-1.....	8.90	Blow back auto- matic	30-round box maga- zine	350-450	40-60	1,700	200	

603. CHARACTERISTICS OF INFANTRY WEAPONS (Continued):

1	2	3	4	5	6	7	8	9
Weapon	Weight in firing position (pounds)	Method of operation	Type of feed	Maximum rate of fire (rounds per minute) ⁽¹⁾	Sustained rate of fire (rounds per minute) ⁽²⁾	Projectiles		
						Maximum range (yards)	Maximum effective range (yards)	Effective radius of burst—fragmentation (yards)
22 Flame thrower, portable, M2-2.....	70 (filled)	Manual	Compressed gas (air or nitrogen)		10-12 sec (in 2 sec bursts)		Thickened fuel-40 ²² Liquid fuel-20 ²²	

¹ For other than full automatic weapons, proficiency of personnel is a controlling factor.

² A variable factor, the time of endurance of which is limited by construction, heating and other conditions influencing prolonged performance.

³ The grenade is effective at any range up to the maximum range. The maximum *accurate* range when fired as a flat trajectory weapon is 75 yards.

⁴ At 45° elevation with auxiliary cartridge M-7.

⁵ These grenades may be fired, from the rifle or carbine, with launcher and grenade projection adapter. Ranges up to 180 yards may be obtained with the rifle.

⁶ Casualty effect dependent on confinement of the area.

⁷ Full automatic.

⁸ M-2 ball and M- AP ammunition (but trajectories are not identical).

⁹ M-1 tracer.

¹⁰ Indirect fire.

¹¹ Machine gun, Cal 30, M 1919A4, tank, has same ballistic qualities.

¹² Gun not well suited to indirect fire.

¹³ Antiaircraft.

¹⁴ AP round.

¹⁵ APC round.

¹⁶ HE round.

¹⁷ For AP round against armored vehicles.

¹⁸ HE 57 mm T 22 (restricted).

¹⁹ Within limits of maximum range. Observation is a controlling factor.

²⁰ HE Light shell. Superquick fuze.

²¹ HE Heavy shell. Delayed action fuze.

²² Chemical (smoke) shell (WP).

²³ Retarded automatic fire.

²⁴ Effective against any known medium or light tank.

²⁵ Wind and foliage affect range.



■ 604. CHARACTERISTICS OF FIELD ARTILLERY WEAPONS:

	1	2	3	4	5
1	Type and caliber (model designation refers to carriage)	Organic to		Weight of piece and carriage, pounds	
		Unit	T/O & E	Travelling position	Firing position
2	Howitzer, 75-mm, M-1 (pack)	FA Bn, 75-mm Pk How..... FA Bn, 75-mm Pk How Trk-Dr..... Parachute FA Bn, 75-mm Pk How..... Glider FA Bn, 75-mm Pk How....	6-155 6-175 6-215 6-225	1,392	1,269
3	Howitzer 105-mm, M2A2	FA Bn, Mtz, 105-mm How, Trk-Dr..... Tr-Dr.....	6-25 6-325	4,900	4,900
4	Howitzer 105-mm, M7	Armed FA Bn.....	6-165	46,500 ^s	46,500 ^s
5	Gun, 4.5 inch M1A1	FA Bn, 4.5-inch Gun, Trk-Dr..... Tr-Dr.....	6-35 6-335	12,500	12,341
6	Rocket, 4.5-inch	Rocket Bn, 4.5-inch, Trk-Dr.....	6-85	1,225	1,225
7	Howitzer 155-mm, M1A1	FA Bn, Mtz, 155-mm How, Trk-Dr..... Tr-Dr.....	6-35 6-335	12,000	11,966
8	Gun, 155-mm M1A1 ^a	FA Bn, Mtz, 155-mm Gun Trk-Dr..... Tr-Dr.....	6-55 6-355	29,900 ^r	27,700
9	Gun, 155-mm M12	FA Bn, Mtz, 155-mm Gun SP....	6-125	55,400	55,400
10	Howitzer, 8-inch, M1A1 ^a	FA Bn, Mtz 8-inch How Trk-Dr..... Tr-Dr.....	6-65 6-365	28,000	30,200
11	Gun, 8-inch M2	FA Bn, 8-inch Gun, Tr-Dr.....	6-395	Gun.....50,400 Carr.....48,840	69,500
12	Howitzer 240-mm, M1	FA Bn, 240-mm How, Mtz, Tr-Dr	6-395	How.....44,300 Carr.....47,200	64,700

^a Proficiency of personnel is a controlling factor.^r For Staff Planning Purposes, a figure of 85% of the maximum range is generally used. This may vary under special conditions.^s Six loads for Pk mules. Average total Wt on mule 342 lbs. Maximum pay load 248 lbs.^s Includes 770 lbs. limber.

604. CHARACTERISTICS OF FIELD ARTILLERY WEAPONS (Continued):

	6	7	8	9	10	11	12	13	14
1	<i>Piece Transportation</i>	<i>Time to emplace (minutes)</i>	<i>Maximum rate of fire— (rounds per minute)¹</i>	<i>Sustained rate of fire— (rounds per minute)</i>	<i>Projectile</i>				
					<i>Maximum Range (yards)</i>		<i>Effective area of burst (yards)</i>		<i>Wt (lbs)</i>
					<i>100%</i>	<i>85%²</i>	<i>Lateral</i>	<i>Range</i>	
2	6 Pk Mules ³ Trk, ¼-ton Trk, ¼-ton	3	6	3	9,610	8,165	30	10	15
3	Trk, 2½-ton Trac, 13-ton M-5	3	4	2	12,205	10,374	50	15	33
4	Self-propelled		4	2	12,205	10,374	50	15	33
5	Trk, 4-ton Trac, 13-ton M-5	5	4	1	21,125	17,955			55
6	Trk, 1½-ton	3	24	14 ⁴	5,210	4,225	50	15	42.5
7	Trk, 4-ton Trac, 13-ton M-5	5	2	1	16,355	13,895	60	18	95
8	Trac, 18-ton M-4 Trk, 7½-ton	30-360	1	½	25,715	21,860	60	18	95
9	Self-propelled		4	1	20,100	17,085	60	18	95
10	Trac, 18-ton, M4 Trk, 7½-ton	30-360	1	½	18,510	15,430			200
11	Trac, 38-ton, M6	120-360	½	¼	35,400	30,090			286
12	Trac, 38-ton, M6	120-360	1	½	25,255	21,470			361

³ Weight fully equipped.⁴ Used with limber, heavy carriage, M2.¹ Includes weight of heavy carriage limber M2, 2,000 lbs.² For 5 minutes.

■ 605. CHARACTERISTICS OF ANTI-AIRCRAFT ARTILLERY WEAPONS.
(MOBILE AND SELF-PROPELLED) :

a. Basic Data:

	1	2	3	4	5
1	Type and caliber (model designation refers to carriage)	Weight of piece and carriage (pounds)		Piece Transportation	Average time to emplace (minutes) ¹
		Travelling position	Firing position		
2	Gun, 40-mm, M2.....	5,549	(²)	Trk, 2½-ton	3 ⁴
3	Gun, 90-mm, M1.....	19,000	(²)	Trk, 6-ton or Trac, 18-ton	20
4	Gun, 90-mm, M2.....	32,300	25,850	Trk, 6-ton, or Trac, 18-ton	20
5	Gun, 4.7-inch, M1.....	61,500	(²)	Trac, 30-ton	40
6	Gun, machine, cal .50, M2	485	485	Trk, 2½-ton	3 ⁷
7	Multiple, MG mount, cal .50, M51 (4 guns)	7,488	7,488	Tlr towed by Trk, 2½-ton	3 ⁸
8	SP Auto Wpns unit M15 1-37-mm gun 2-cal .50 MG	20,100	20,100	Self-propelled (half-track)	None
9	SP MG unit M16, cal .50 (4 guns)	19,800	19,800	Self-propelled (half-track)	None

¹ Time required to prepare gun for action—from travelling position. Time for digging in, camouflage, etc., to be added.

² For non-automatic weapons, proficiency of personnel is a controlling factor.

³ Information not available.

⁴ To emplace with director, 15 to 30 minutes.

605. CHARACTERISTICS OF ANTI-AIRCRAFT ARTILLERY WEAPONS (MOBILE AND SELF-PROPELLED) :

Basic Data (Continued) :

1	6	7	8	9	10	11	12
	Elevation (degrees)		Maximum rate of fire (rounds per minute) ¹	Range (yards)			
	Minimum	Maximum		Horizontal		Vertical	
				Maximum	30 sec fuze limit	Maximum	30 sec fuze limit
2	-6 ^a	+90	120	10,850	4,315 ^a	7,625 ^a	4,315 ^a
3	-5	+80	18	19,980	12,425	13,170	11,625
4	-10	+80	25	19,980	12,425	13,170	11,625
5	-5	+80	12 ^c	28,250	16,400	20,600	16,500
6	-15	+69	500-650	7,125		(^e)	
7	-10	+90	2,000 to 2,680	7,125		(^e)	
8	(^e)	(^e)	37-mm=120 .50 Cal= 1,000-1,300	7,125		(^e)	
9	-10	+90	2,000 to 2,600	7,125		(^e)	

^a With jacks—11°.^c 9 second fuze limit.¹ Gun may be fired from truck, or removed from truck without disassembling from cradle or tripod.^c Gun can be fired from travelling position.^e Range of cal .50 approximately same as shown in line 6 for M2.

605. CHARACTERISTICS OF ANTI-AIRCRAFT ARTILLERY WEAPONS (MOBILE AND SELF-PROPELLED) (Continued) :

b. Antiaircraft Artillery Automatic Weapons Ranges:

Altitude Ft.	Maximum Deterrent Horizontal Range (Yds) (¹)			Maximum Killing Horizontal Range (Yds) (¹)			Effective Killing Horizontal Range (Yds) (¹)		
	40-mm director control	40-mm M7 sight control	.50 cal. MG (³)	40-mm director control	40-mm M7 sight control	.50 cal. MG	40-mm director (²)	40-mm M7 sight control	.50 cal. MG
1000	3500	3500	1800	2500	1500	900	1500-600 (⁴)	1000-400 (⁴)	500-0

¹ Horizontal range in yards decreases as altitude increases and vice versa.

² Average hit expectancy or number of hits expected per 100 Rds fired 4%.

³ Tracer burn out range. The extent of deterrent effect of .50 cal. tracer is questionable.

⁴ Minimum range limited by max tracking rate. For targets diving directly at the gun, minimum range would be limited.

605. CHARACTERISTICS OF ANTI-AIRCRAFT ARTILLERY WEAPONS (MOBILE AND SELF-PROPELLED) (Continued):

c. Perforating Characteristics of the Projectiles:

Weapon	Projectile, Type and Weight (lbs)	Muzzle Velocity (ft/sec)	Perforation at 1,000 yds from 1 round	
			Concrete (5,000 lb/sq in)	Homogeneous Armor Plate
90-mm M1 and M2.....	AP M77 23.4	2,700	3.8 ft	5.5 in

d. Cumulative Effect of Weapons on Concrete:

Weapon	Type of Ammunition	Simulated Range, yds	Number of rounds to perforate concrete pillbox		Remarks
			Wall thickness		
			5 feet	7 feet	
40-mm gun, M1	AP M81	1,000	60-80	.....	84 rounds perforated 5-foot wall
90-mm gun, M1	AP M77	1,000	3-4	8-10	9th round perforated 7-foot wall

■ 606. CHARACTERISTICS OF COAST ARTILLERY WEAPONS (*Seacoast Mobile*):

	1	2	3	4	5	6	7	8
1	Type and caliber (model designation refers to carriage)	Weight of piece and carriage (pounds)		Pieces transportation	Time to emplace	Maximum rate of fire (rounds per minute)	Sustained rate of fire (rounds per minute)	Maximum range (yards)
		Traveling position	Firing position					
	RAILWAY:							
2	Gun, 8-inch (old).....	174,000	174,000	Rwy flat car	3 hours	1½	1½	28,000
3	Gun, 8-inch, M1A1.....	230,000	230,000	Rwy flat car	1½ hours	1½	1½	32,000
4	Gun, 14-inch, M1920.....	730,000	730,000	Rwy flat car ⁽¹⁾	8 hours	½	½	45,000
5	Mortar, 12-inch, M1918.....	176,800	176,800	Rwy flat car ⁽¹⁾	3 hours	⅔	⅔	15,291
	TRACTOR DRAWN:							
6	Gun, 155-mm, M1917, & M1919.....	24,000	⁽²⁾	Tractor, Hv, M1	1-6 hours	3	⁽²⁾	20,000
7	Gun, 155-mm, M1917A1 M1918A1, M2, and M3.....	27,800	⁽²⁾	Tractor, Hv, M1	1-6 hours	4	⁽²⁾	20,000

¹ Routings restricted to certain railway lines by requirements of curvature, clearance and bridge capacities.

² Information not available.

■ 607. CHARACTERISTICS OF CHEMICAL WEAPONS:

1	1	2	3	4	5	6	7	8	9
	Weapon	Weight (pounds)	Trans- portation	Time to emplace (minutes)		Maximum rate of fire (rounds per minute)	Sustained rate of fire (rounds per minute)	Projectile	
				Day	Night			Maximum range (yards)	Effective radius of burst (yards)
2	4.2-inch Cml mortar, M2..... Barrel..... Baseplate..... Standard..... Hand cart, loaded with Cml mortar, com- plete..... Hand cart, loaded with 10 rounds shell (boxes).....	91 150 53 491 479	¼-ton Trk & Tr Hand cart may be used	5	10	20	5	4,400 [M6 Pow- der]	40 (WP Shell) 30 (HE Shell)
3	Flame thrower, portable, M2-2.....	See Par. 603, line 22.							

■ 608. CHARACTERISTICS OF CHEMICAL AGENTS:

a. Toxic Gas:

	1	2	3	4	5	6	7	8	9	10
1	Agent (common name)	CWS Sym- bol	Marking on munition	Odor in air	Persistence		Tactical Classification	Physiological Classification	Effect on body	Munitions suitable for use
2	Phosgene	CG	1 green band CG GAS	Like en- silage, fresh- cut hay	5 minutes ¹ 10 minutes ⁽²⁾	10 minutes ⁽¹⁾ 20 minutes ⁽²⁾	Casualty gas	Choking gas ⁽²⁾	Burns lower respira- tory tract, causes accumulation of fluid in lungs	Cml Mort shells, bombs
3	Hydrocyanic Acid Gas	AC	1 green band AC GAS	Bitter Almond	5-10 seconds ⁽¹⁾	Same as summer	Casualty gas (instan- taneous)	Blood and nerve poison	Kills by poisoning nerves	Bombs.
4	Cyanogen Chloride	CK	1 green band CK GAS	Biting	1 to 10 min- utes	Same as summer	Casualty gas	Blood and nerve poison	Paralysis, injures lungs, causes tears	Bombs
5	Mustard	H ⁷	2 green bands H GAS	Like garlic or horse- radish	3 to 4 days ⁽¹⁾ 1 week ²	Several weeks	Casualty gas	Blister gas ⁽¹⁾	Is absorbed in skin and lung tissue, produces burns and blisters	All type shell, air- plane spray, bombs, land mines
6	Lewisite	L	2 green bands L GAS	Like ger- aniums, then biting	24 hour ¹ 2 to 3 days ⁽²⁾	1 week or more	Casualty gas	Blister gas ⁽¹⁾	Is absorbed in skin and lung tissue, Produces burns and blisters. Also poisons body	Bombs, land mines, spray
7	Nitrogen Mustards	HN	2 green bands: HN GAS	Faint fishy	2 hours	Days	Casualty gas	Blister gas ⁽¹⁾	Like H but faster	Spray, bombs, shell, land mines

608. CHARACTERISTICS OF CHEMICAL AGENTS:

a. Toxic Gas (Continued):

	1	2	3	4	5	6	7	8	9	10
8	Tear Gas	CN	1 red band CN GAS	Like apple blossoms	Solid form: several days Burning mixture: 5 minutes	Solid form: several weeks Burning mixture: 10 minutes	Harassing gas Training and civil disturbances only	Tear gas (⁶)	Eye and mild skin irritation	Grenades, pots.
9	Tear Gas Solution	CNS	1 red band CNS GAS	Like fly paper	1 hour ¹ 2 hours ²	6 hours ¹ 1 week ²	Harassing gas	Tear gas (⁶)	Violent eye irritation, vomiting, and mild skin itching	Shells, spray.
10	Adamsite	DM	1 red band DM GAS	No pronounced odor	5 minutes	Same as summer	Harassing gas	Vomiting gas (⁶)	Headache, nausea, violent sneezing, followed by temporary debility	Burning type munitions
11	Diphenyl- chlorarsine	DA	1 red band DA GAS	Like shoe polish	5 to 10 minutes	Same as summer	Harassing gas	Vomiting gas ⁶	Sneezing, vomiting, headache	Burning type munitions

608. CHARACTERISTICS OF CHEMICAL AGENTS (Continued):

b. Screening Smokes:

1	1	2	3	4	5	6	7	8	9	10
	Agent (common name)	CWS Sym- bol	Marking on munition	Odor in air	Persistency		Tactical Classification	Physiological Classification	Effect on body	Munitions suitable for use
					Summer	Winter				
2	White phosphorus	WP	1 yellow band WP SMOKE	Like matches	While burning	Same as summer Loses effective- ness in snow	Screening smoke also casualty, and incendiary	None	Solid particles burn flesh. Smoke relatively harmless	Grenades, shells, bombs
3	Sulfur trioxide solution	FS	1 yellow band FS SMOKE	Acid or acrid	While container is operating	Same as summer	Screening smoke	None	Liquid burns like strong acid. Smoke causes prickling sensation on skin	Spray tanks, shells
4	HC mixture	HC	1 yellow band HC SMOKE	Acrid, suffocating when very dense	While burning	Same as summer	Screening smoke	None	None from solid. Slight suffocating action by heavy smoke Dangerous in confined places	Burning type munitions only: grenades, smoke pots, BE shell bombs

608. CHARACTERISTICS OF CHEMICAL AGENTS (Continued):

c. Incendiaries:

	1	2	3	4	5	6	7	8	9	10
2	Thermite	TH	1 purple band: TH INCEND				Incendiary			Bombs, grenades
3	Magnesium	MG	1 purple band: INCEND				Incendiary			Bombs
4	Incendiary mixtures	PT1	1 purple band: PT 1 INCEND				Incendiary			Bombs
5	IM (Isobutyl Methacrylate)	IM	1 purple band: IM INCEND				Incendiary			Oil type incendiary bombs
6	NP (Napalm Thickener)	NP	1 purple band: NP INCEND				Incendiary			Oil type incendiary bombs, flame throwers ^a

¹ In open.

² In woods.

³ Choking gas—formerly called Lung Irritants.

⁴ Blister gases formerly called Vesicants.

⁵ Tear gases formerly called Lacrimators.

⁶ Vomiting gas.—An agent which causes sneezing, vomiting, irritation of the throat and nose, and temporary physical disability. (Up to 24 hours). Formerly called Sternutators.

⁷ Symbol for purified mustard is HD.

⁸ Used to thicken gasoline for use in flame throwers and incendiary bombs.

■ 609. DATA ON CHEMICAL MUNITIONS:
a. Other than Incendiary Bomb Clusters:

	1	2	3	4	5	6
1	Munition	Agent and weight of filling (pounds unless otherwise indicated)	Weight of filled munition complete (pounds unless otherwise indicated)	Approximate time for agent to burn or evaporate at point of release ⁽¹⁾	Marking and color	Chemical efficiency (percent) ⁽²⁾
2	Grenade, hand, irritant, CN-DM, M-6	Mixture of CN-DM.....1	2.0	1 minute	CN-DM Gas; 1 band, red	50
3	Grenade, incendiary, AN-M-14	TH.....1.65	2.62	2 minutes	TH Incend; 1 band, purple	63
4	Grenade, hand, smoke, WP, M-15	WP.....1	1.95	1 minute	WP Smoke; 1 band, yellow	51
5	Grenade, Smoke, Colored, M18 (4 colors) ^{3 6}	0.75	2.0	1 minute	1 band, yellow; Lettering and color of top indicate color	38
6	Grenade, hand, Smoke, HC, M-8 ⁶	HC.....1.5	2.0	1-2 minutes	HC Smoke; 1 band, yellow	75
7	Candle, gas, irritant, DM, M-1	DM.....2	9	2 minutes	DM Gas; 1 band, red	22
8	Land mine, Cml (1-gallon can)	H.....10.5	13.0	10 days	H Gas; 2 bands, green	85
9	Pot, Smoke, HC, M-1	HC.....12.5	13.9	12 to 15 minutes	HC Smoke; 1 band, yellow	93
10	Shell, 4.2-inch chemical mortar	WP.....7.5 H.....6.5 HE.....6.8	WP.....25.5 H.....24.5 HE.....26.0	2-3 minutes 10 days	WP Smoke; 1 band, yellow H Gas; 2 bands, green	WP.....29 H.....26 HE.....26
11	Shell, Smoke, 60-mm Mortar	WP	WP	1 minute	WP Smoke; 1 band, yellow	

609. DATA ON CHEMICAL MUNITIONS:

a. Other than Incendiary Bomb Clusters (Continued):

	1	2	3	4	5	6
12	Bomb, 2-inch bomb thrower	HC	HC	4-7 minutes	HC Smoke; 1 band, yellow	
13	Grenade, Rifle, Smoke, colored (4 colors *)	0.4		1 minute	1 band, yellow (color indicated)	
14	Grenade, Rifle, Smoke, colored streamer (4 colors *)			1 minute	1 band, yellow (color indicated)	
15	Grenade, Rifle; Smoke, WP, M-19		WP	1 minute	WP Smoke; 1 band, yellow	
16	Grenade, Rifle; Smoke, HC, M-20		HC	3-5 minutes	HC Smoke; 1 band, yellow	
17	Shell, 81-mm mortar, Cml	WP.....4.1	WP.....11.4	1 minute	WP Smoke; 1 band, yellow	36
18	Shell, 75-mm howitzer, Cml	H.....1.04 WP.....1.34	H.....16.6 WP.....17.13	1 week 30 seconds	H Gas; 2 bands, green WP Smoke; 1 band, yellow	H.....7.0 WP.....8.8
19	Shell, 75-mm gun, Cml	WP.....1.81 H.....1.33	WP.....19.3 H.....18.9	Same as 75-mm Howitzer	Same as above	WP.....10.8 H.....10.0
20	Shell, 76-mm gun, Cml	HC.....3.15	HC.....17.18	2-5 minutes	HC Smoke; 1 band, yellow	17.7
21	Sbell, 105-mm howitzer, Cml BE *	H.....3.17 WP.....4.06 HC.....7.50	42.8 43.7 41.9	1 week 1 minute 2-5 minutes	Same as above HC Smoke; 1 band, yellow	H.....9.4 WP.....11.7 HC.....23

609. DATA ON CHEMICAL MUNITIONS:

a. Other than Incendiary Bomb Clusters (Continued):

1	2	3	4	5	6
Munition	Agent and weight of filling (pounds unless otherwise indicated)	Weight of filled munition complete (pounds unless otherwise indicated)	Approximate time for agent to burn or evaporate at point of release (1)	Marking and color	Chemical efficiency (percent) (2)
22 Shell, 155-mm gun, Cml BE 4	H.....11.5 WP.....15.3 HC.....11.25	125.7 129.7	10 days 2 minutes	H Gas; 2 bands, green WP Smoke; 1 band, yellow HC Smoke; 1 band, yellow	H.....12.2 WP..... HC.....
23 Shell, 155-mm howitzer, Cml BE 4	H.....11.5 WP.....15.3 HC.....11.25	107.4 111.3	H.....10 days WP.....2 minutes HC.....2 minutes	H Gas; 2 bands, green WP Smoke; 1 band, yellow HC Smoke; 1 band, yellow	H.....12.2 WP.....15.6 HC.....
24 Tanks, airplane, Cml spray: M-10, non-pressure	FS.....475 L.....471 H.....339	FS.....539 L.....535 H.....403	FS.....5-10 seconds L.....4-6 hours H.....4-6 hours		88 88 84
25 M-33, non-pressure	FS.....1100 L.....1100 H.....749	FS.....1304 L.....1304 H.....954	FS.....5-10 seconds L.....4-6 hours H.....4-6 hours		84 84 78
26 Bomb, chemical: 100-pound, M-47	WP.....100 H.....71	120 102	8 to 10 minutes 1 week	WP Smoke, 1 band, yellow H Gas; 2 bands, green	83 69
27 Bomb, chemical: 115-pound, M-70	H.....60	125	1 week	H Gas; 2 bands, green	48
28 Bomb, chemical: 500-pound, AN-M-78	CG.....203 CK.....165	CG.....471 CK.....438	5-10 minutes	CG Gas; 1 band, green CK Gas; 1 band, green	42 37

609. DATA ON CHEMICAL MUNITIONS:

a. Other than Incendiary Bomb Clusters (Continued):

	1	2	3	4	5	6
29	1,000-pound, AN-M-79	CG.....417 CK.....344 AC.....200	CG.....927 CK.....852 AC.....708	5-10 minutes	CG Gas; 1 band, green CK Gas; 1 band, green AC Gas; 1 band, green	45 39 28
30	<i>Bombs, Incendiary:</i> Magnesium body: AN-M-50 (50X)	TH.....10 oz.	4	9 to 12 minutes	AN-M-50 (X) ^a 1 band, purple	
31	100-pound, M-47:	IM.....40 lbs. NP.....40 lbs.	70	10 to 20 minutes	IM, 1 band, purple	
32	6-pound, M-69:	IM.....2.6 lbs. NP.....2.6 lbs.	6.2	5 minutes	NP, 1 band, purple AN-M69, 1 band, purple	
33	10-pound, M-74:	PT1.....2.8 lbs. NP.....1.8 lbs.	8.5 7.5	7 minutes	M-74, 1 band, purple M-74, 1 band, purple	
34	500-pound, AN-M-76	PT1.....175 IM.....115	PT1.....473 IM.....413	7 minutes	PT1, 1 band, purple IM; 1 band, purple	

^a Variable depending on amount of agent released, type of agent, terrain, and meteorological conditions.

^b Ratio filling to total weight.

^c Colors: Red, yellow, green, violet. For air-ground and other signaling.

^d Also filled with Red, Yellow, Green, Violet smoke mix with burning time 1 to 2½ min.

^e X after designation indicates explosive charge. Small incendiaries assembled and dropped in aimable clusters of varying sizes.

^f Can be fired as a rifle grenade by use of the Adapter, Grenade, Projection, Chemical T-2.

609. DATA ON CHEMICAL MUNITIONS (Continued):

b. Clusters, Incendiary Bombs:

	1	2	3
1	<i>Munition—Amiable Clusters</i>	<i>Number and Type of Component Bombs</i>	<i>Weight of Complete Cluster (pounds)</i>
2	500-pound AN-M14.....	104.....AN-M50T-A2 6.....AN-M50X-A3	495
3	500-pound AN-M17.....	88.....AN-M50A2 22.....AN-M50X-A3	465
4	Quick-opening clusters, 100-pound, AN-M6.....	28.....AN-M50A2 6.....AN-M50X-A3	143
5	100-pound AN-M12.....	14.....AN-M69	98
6	500-pound M7.....	102.....AN-M50A2 26.....AN-M50X-A3	527
7	500-pound AN-M13.....	60.....AN-M69	427

■ 610. CHEMICAL AMMUNITION REQUIREMENTS:

a. Gas shell:

(1) For liquid contamination, using persistent gas-filled shell. Agent—H or HD.^{1 2}

	1	2	3	4	5
1	<i>Weapon</i>	<i>75-mm Gun & How</i>	<i>105-mm How</i>	<i>155-mm Gun & How</i>	<i>4.2" CM</i>
2	Rounds impacting on one square, 100x100 yards.....	588	130	45	70

¹ To maintain effective liquid contamination, refresher contaminations should be made in 4 hours in hot climate (temperature over 80°) and 8 hours in cooler climate (temperature 60° to 75°).

² Expenditures represent the minimum requirements to be fired under any meteorological condition within 1 hour. If ground is semi-marshy, double table quantities.

610. CHEMICAL AMMUNITION REQUIREMENTS:

a. Gas shell (Continued):

(2) For H vapor concentration, using persistent gas-filled shell. Rounds per square.¹ Hot and Humid Weather, 80°F and above.²

	1	2	3	4	5	6
		<i>Open terrain or thinly wooded wind speed, mph</i>				<i>Heavily wooded terrain, wind speed in open up to 10 mph</i>
		2	4	6	10	
1	Clear or partially clear day:					
2	4.2" CM:	55	70	100	150	55
3	75-mm Gun & How:	330	420	600	900	220
4	105-mm How:	110	140	200	300	110
5	155-mm Gun & How:	28	35	50	75	28
6	Overcast day or night:					
7	4.2" CM:	42	52	75	100	42
8	75-mm Gun & How:	252	312	450	600	252
9	105-mm Gun & How:	84	104	150	200	84
10	155-mm Gun & How:	21	26	38	50	21
11	Clear night:					
12	4.2" CM:	25	32	45	80	25
13	75-mm Gun & How:	150	192	270	480	450
	105-mm How:	50	64	90	160	150
	155-mm Gun & How:	13	16	23	40	13

¹ Quantities given are to produce casualties among masked troops provided they are exposed to vapor for 4 hours. To attain casualties when the exposure time is 2 hours, multiply expenditures by 1.25; to attain casualties in ½ hour, multiply by 2.

² For cool weather (temperatures around 60° F.) multiply requirements by 2.

(3) For CG Concentration to attain casualties by establishing a sufficient concentration of gas within 2 minutes. ¹ Weapon—CG filled 4.2 in Cml Mortar.

	1	2	3	4	5
		<i>Rounds impacting on 4 artillery squares wind speed (mph)</i>			
	<i>Duration of fire</i>	2	4	6	8
2	1 minute:	190	300	380	470
3	2 minutes:	290	360	450	540

¹ Quantities given will cover approximately 80% of 4 artillery squares with a sufficient concentration of CG in 2 minutes. For 50% coverage, multiply requirements by 0.5; for 90% coverage, multiply requirements by 1.5.

610. CHEMICAL AMMUNITION REQUIREMENTS (Continued):

b. Smoke shell:

(1) Rounds per 100 yards per minute for combined screening and casualty effects (WP).

	1	2	3	4	5
1	Wind direction	Following 6 o'clock	Head 12 o'clock	Flank 3 or 9 o'clock	Quartering
2	81-mm mortar.....	2.5	2	1.0	2
3	4.2-inch chemical mortar.....	1.25	1	.5	1
4	75-mm gun and howitzer.....	12	10	4	8
5	105-mm howitzer.....	9	7	1.5	6
6	155-mm howitzer.....	3	2	.5	2

(2) Rounds per 100 yards per minute for screening effects only:

To obtain number of rounds required measure line to be screened in 100 yard increments. Multiply the number of increments by the quantity shown for the direction of wind, multiply by number of minutes screen is to be maintained. Fire twice the number of rounds indicated during the first minute to establish screen.

ROUNDS PER 100 YARD INCREMENTS PER MINUTE^{1,2,3,4}

	1	2	3	4	5
1	Wind direction	6 or 12 o'clock		3 or 9 o'clock	
		WP	HC	WP	HC
2	81-mm mortar.....	1.5	.....	0.8	.....
3	4.2-inch Cml mortar.....	0.7	.....	0.4	.....
4	75-mm gun or How.....	6.0	5.0	3.0	0.5
5	105-mm How.....	4.0	3.0	1.5	0.25
6	155-mm gun or How.....	1.3	3.0	0.5	0.25
7	Smoke pots HC M-1 ⁵.....	.....	6.0	.....	3.0

¹ Table holds for winds up to 3 mph.

² For winds 3 mph to 10 mph multiply above results by 1.5.

³ For winds 10 mph to 15 mph multiply above results by 2.

⁴ Base ejection shell should be fired with combination time and superquick fuse M-54 to give an air burst 1 to 2 seconds less than that used for zero height of burst.

⁵ For smoke pots, the quantities indicated are the number of pots that must be kept burning. The smoke pots burn an average of 12 minutes; hence the indicated quantity will screen 100 yards for that period.

610. CHEMICAL AMMUNITION REQUIREMENTS:

c. Airplane munitions:

Bombs, M47, or M70 (H, or L, for contamination)

Bombs per square (100 yards by 100 yards), 8

Bombs per 100 yards of occupied target 3

Bombs per 100 yards of road for interdiction 5

For bombs used on wooded area targets, reduce quantity 50%

For temperatures between 50° and 20° F, increase quantity 25%,
for H.

d. Land mines, H or L filled.—(Effect is obtained by contamination) :

MINES REQUIRED

1	1	2
	Purpose	Mines required
2	Barriers	Four parallel lines of mines 25 yards apart with mines staggered at 10-yard intervals in each line
3	Large areas	Lines of mines 25 yards apart with mines staggered at 20-yard intervals in each line
4	Along roads	One line of mines on each side of the road with mines staggered at 10-yard intervals along each line
5	Demolitions	Mines placed in lines 5 yards apart at 5-yard intervals along each line. The approaches to the demolition should be contaminated using 20 mines per square.

■ 611. CAPABILITIES OF CHEMICAL BATTALIONS: ¹

a. *Mortar Operations.*—Firing for area neutralization using HE Shell, WP shell or Mixed HE-WP require 24 rounds per square. Based on Prescribed Loads Platoon can neutralize 8 squares, Co 24 squares & Bn 72 squares. Additional Am will only increase length of neutralization period.

	1	2	3	4
	<i>Agent</i>	<i>Platoon</i>	<i>Company</i>	<i>Battalion</i>
1	Non-persistent gas	Unit too small to use effectively	Covers target area of 6½ squares with a surprise concentration Gas also effective on unmasked personnel downwind on additional area at least equal to initial area covered	Covers target area of 20 squares with surprise concentration
2	Persistent gas	Can contaminate 17 squares for 4 hours by firing 1 hour ²³	Three times the capability of one platoon	Three times the capability of one company
3	Harassing gas (i.e. CNS)	Harasses for 4 hours 59 squares, or for 8 hours, 29 squares, etc. Gas remains effective for about 1 hour after firing ceases. The concentration should be maintained for at least 2 hours.	Three times the capability of one platoon	Three times the capability of one company
4	Smoke (WP)	Can maintain 500 yd screen for 60 minutes with adverse winds. Flank winds approximately double this capability	Three times the capability of one platoon	Three times the capability of one company

¹ Figures are based on normal loads of ammunition of one type shell.

² In woods twice as much area can be neutralized.

³ Based on Bn Am load. Any Am resupply increases capability proportionately.

b. *Land mine operations:*

	1	2	3	4	5	6
	<i>Nature of task</i>	<i>Squad task</i>	<i>Platoon task</i>	<i>Company task</i>	<i>Average time ¹</i>	
1		<i>1 Truck (2½-ton)</i>	<i>4 Squads</i>	<i>12 Squads</i>	<i>Time fuse or detonating cord</i>	<i>Wired for firing electrically</i>
2	Barrier, 100 yards deep	800 yards	3,200 yards	9,600 yards	4 hours	8 hours
3	Road contamination	1,600 yards	6,400 yards	19,200 yards	15 to 20 minutes (?)	2 hours
4	Mines required	330	1,320	3,960		

¹ The time should be increased 50% for night work.

² Detonating cord laid from truck, mines placed on cord.

612. FIELD ARTILLERY BARRAGE AND CONCENTRATIONS:

a. Barrages:

	1	2	3	4	5	6
1	Caliber and type	Burst of one shell (yards)	Width of barrage (yards)			Maximum radius of large fragments (yards)
			Normal	Emergency	Rolling	
2	75-mm howitzer battery.....	10 x 30	200	200	100	150
3	105-mm howitzer battery.....	15 x 50	300	300	200	300
4	155-mm howitzer battery.....	18 x 60	400	400	(1)	550
5	155-mm gun battery.....					

¹ Not suitable for firing close to our troops. May be used to add depth to barrage.

b. Concentrations:

	1	2
1	Caliber and Type	Approximate dimensions (yards) Fire of all units superimposed
2	105-mm howitzer battery.....	200x200
3	105-mm howitzer battalion.....	
4	2 battalions, including one 155-mm or larger.....	300x300
5	4 or more battalions.....	400x400
6	4.5" rocket platoon.....	500x500
7	4.5" rocket battery.....	
8	4.5" rocket battalion.....	

■ 613. CHARACTERISTICS OF LANDING CRAFT:*a. General:*

(1) Data contained in this paragraph, e.g., speed and endurance, may vary under operational conditions.

(2) Designating letters and names are used in the following general manner:

(a) LC (Landing Craft) is applied to non-ocean going vessels of less than 150 feet over-all length, designed for landing operations.

(b) LS (Landing Ship) is applied to ocean going vessels of more than 200 feet over-all length, designed for landing operations.

(c) LV (Landing Vehicle) is applied to small units, designed for landing operations, and capable of use on land or water.

(3) Data on the following pages is presented under headings which indicate their principal use:

(a) Personnel Landing Craft.

(b) Vehicle and Tank Landing Craft.

(c) Support and Command Craft.

(d) Amphibious Vehicles.

(e) Repair and Supply Craft.

(f) Landing Ships.

(4) Major operational types are prefixed by an asterisk (*).

613. CHARACTERISTICS OF LANDING CRAFT (Continued):

b. Personnel Landing Craft:

1	2	3	4	5	6	7	8	9	10	
	Type	Crew (EM)	Capacity	Length	Beam	Draft	Wt of Displacement	Speed (Knots)	Endurance (Mi)	Builder
2	*LCA, Landing Craft, Assault	4+1 O per 3 craft	35 Trs & 800 Lbs Equip	41' 1½"	10' ¾"	1' 10" Fwd, 2' 3" Aft, loaded 1' 2" Fwd, 1' 10" Aft, unloaded	13 tons maximum	8.5 max, 7 cruise	50-80 @ 7 Kts, loaded, 65 @ 10 Kts	U.K.
3	*LCI(L)-(1-350); Landing Craft, Inf (Large)	24	6 O, 182 EM or 75 tons cargo	158' 5½"	23' 3"	2' 8" Fwd, 4' 10" Aft (landing) 3' 1½" (mean)	380 tons, loaded 216 tons (light) 234 tons (landing)	16 max, loaded	4,000 @ 12 Kts (beaching dft) 500 @ 15 Kts or 1,500 @ 12 Kts	U.S.
4	LCI(L)-(351-), Landing Craft, Inf (Large)	29	9 O, 196 EM; 32 tons cargo	160' 3"	23' 3"	3' Fwd, 5' Aft, landing 5' 8" Aft (loaded)	250 tons (landing) 387 tons (loaded)	15.5 max 14.5 cruise	8,000 @ 12 Kts	U.S.
5	*LCP(R), Landing Craft, Pers (Ramped)	3	30-36 Trs or 6,700- 8,100 Lb cargo; fuel space may reduce capacity	35' 10"	10' 9"	2' 6" Aft, light 3' 6" Aft, loaded	13,500 light	9 Max, loaded	105 Max loaded	U.S.
6	*LCR(S), Landing Craft, Rubber (Small)	0	7 Trs	12' 5"	5' 11"	(¹)	210 Lb, light 277.4, with motor	3½-4½, with engine	(¹)	U.S.
7	*LCR(L), Landing Craft, Rubber (Large)	0	10 Trs	16'	8'	(¹)	395 Lbs, light 474 Lbs, with motor	3½-4½	(¹)	U.S.

c. Vehicle and Tank Landing Craft:

2	*LCM(3), Landing Craft, Mecs (Mk 3)	4	1 30-ton Tk, 60,000 Lb cargo or 60 Trs; Bureau type carries 120,000 Lb cargo	50'	14' 1"	3' Fwd, 4' Aft, light 3' 6" Fwd, 4' 6" Aft, loaded	52,000 Lbs, light 52 tons, loaded	11 Max, 8 loaded	850 @ 6½; 140 @ 11 Kts.	U.S.
3	LCM(6), Landing Craft, Mecs (Mk 6)	4+1 O per 3 craft (6 British)	1 30-ton Tk or 60,000 Lb cargo, or 60 Trs; Bureau type, 120,000 Lb cargo	56'	14' 1"	3' Fwd, 4' Aft, light	52,000 Lb, light	11	850 @ 6½; 150 @ 11 Kts	U.S.
4	*LCT(5), Landing Craft, Tk (Mk 5)	11	5 30-ton or 4 40-ton or 3 50-ton Tks or 9 Trks or 150 tons cargo	114' 2"	32'	2' 10" Fwd, 4' 2" Aft, landing 1' 6" Fwd, 3' 9" Aft, light	286 tons, landing, 134	8 Max	700 @ 7 Kts, loaded	U.S.

613. CHARACTERISTICS OF LANDING CRAFT:
Vehicle and Tank Landing Craft (Continued):

1	2	3	4	5	6	7	8	9	10
Type	Crew (EM)	Capacity	Length	Beam	Draft	Wt of Displacement	Speed (Knots)	Endurance (Mi)	Builder
5 *LCT(6), Landing Craft, Tk (Mk 6)	12	4 Med or 3 50-ton Tks or 170 tons cargo; accommodations for 8 Trs	120' 4"	32'	3' 4" Fwd, 4' Aft, landing	143 tons, light 284, landing	8, Max	1200 @ 7 Kts	U.S.
6 *LCVP, Landing Craft, Vehicle, Pers	3+1 O per 3 craft	36 Trs or 8,100 Lbs cargo or 3 tons vehicles	36'	10' 11½"	3' Aft, 2' 2" Fwd, light	9 tons, light	9 Kts Max	102 @ 9 Kts	U.S.

d. Support and Command Craft:

2 *LCC(2), Landing Craft, Control (Mk 2)	9	Crew only	56'	14' 6"	3' 1", Max	25 tons	13.5 Max	500 @ 10 Kts 250 @ Max	U.S.
3 *LCS(S) (1), Landing Craft, Support (Small) (Mk 1)	6	3-4+crew and gunners	36' 8" 10' 10"	(¹)	3' 6", light	20,000 Lbs, light 22,000 Lbs, Std	12	115 @ full	U.S.
4 LCS(S) (2), Landing Craft, Support (Small) (Mk 2)	5	3-4+crew and gunners	36' 8"	10' 11½"	3' 3", light	23,000 Lbs	11½	135 @ 11½ Kts Max	U.S.
5 *LCS(L) (3), Landing Craft, Support (Large) (Mk 3)	73	Crew only	158' 5"	23' 3"	4' 6" Fwd, 5' 10" Aft	227 tons 383 tons, loaded (est)	(¹)	(¹)	U.S.

e. Amphibious Vehicles:

2 *LVT(3), Landing Vehicle, Tracked (Mk 3)	3	8,000 Lbs cargo or 24 equipped Trs	24' 1½"	11'	(¹)	28,000 Lbs (unloaded)	5.2 Kts (water) 25 mph (land)	150 (land) 75 (water)	U.S.
3 *LVT(4), Landing Vehicle, Tracked (Mk 4)	3	8,000 Lbs cargo, Max	26' 1"	10' 8"	(¹)	23,350 Lbs (unloaded)	5.4 Kts (water) 15 mph (land)	150 (land) 75 (water)	U.S.
4 *LVT(A) (1), Landing Vehicle, Tracked (Armd) (Mk 1)	6	1,000 Lb cargo	26' 1"	10' 8"	(¹)	25,200 Lbs	5.4 Kts (water) 25 mph (land)	150 (land) 75 (water)	U.S.
5 *LVT (A) (4), Landing Vehicle, Tracked (Armd) (Mk 4)	5	5,000 Lb, Am and gear	26' 1"	10' 8"	(¹)	35,100 Lbs	5.2 Kts (water) 15 mph (land)	150 (land) 75 (water)	U.S.
6 *DUKW, 2½-ton, 6x6 Amph Trk	1	25 Equipped Trs, or 12 loaded litters, or 5,000 Lb. Cargo	31' 0"	8' 0"	(¹)	13,000 Lbs (light) 18,600 Lbs (loaded)	50 mph (land) 5.5 Kts (water)	400 @ 35 mph (land)	U.S.

613. CHARACTERISTICS OF LANDING CRAFT (Continued):

f. Landing Ships:

	1	2	3	4	5	6	7	8	9	10
2	*LSD, Landing Ship, Dock	17 O, 249 men LC-6 O, 30 men	3 LCT (5), (6) each with 5 Med Tks or 2 LCT (3), (4) each with 12 Med Trks, or 14 LCM (3) each with 1 Med Tk, or 1,500 long tons cargo, or 41 LVT's, or 47 DUKW's or 22 O, 310 men	457' 9"	72'	8' 2½" Fwd, 10' ½" Aft (light) 10' 8" Fwd, 13' 8" Aft (light Sv) 15' 5½" Fwd, 16' 2" Aft (seagoing, loaded) 30' 9½" Fwd, 29' 9½" Aft (ballasted) 8' 1" Fwd, 9' 11" Aft (well)	7,930 (seagoing) 4,032 (light)	17 Kts designed (Max)	8,000 @ 15 Kts	U.S.
3	*LSM, Landing Ship, Med	58	5 Med, or 3 Hv Tks (185 tons Max pay load, beaching) or 6 LVT's or 9 DUKW's Trs, 48	203' 6"	34' 6"	6' 11¼" Aft, 3' 5" Fwd (landing) 6' 4½" Fwd, 8' 3½" Aft (full load)	1,095 tons (loaded) 741 tons (landing)	13.2 Max	4,900 @ 12 Kts, Est	U.S.
4	*LST, Landing Ship, Tk (UK designation LST (2))	(2 davit) 7 O, 104 men; Trs 16 O, 147 men (6 davit) 9 O, 120 men; Trs 14 O, 131 men	1,600 to 1,900 tons (ocean-going Max), (400 tons, main deck load), 1,060 tons diesel oil; 336 stretcher cases	328' 0"	50'	8' 2¾" Fwd, 14' 1¼" Aft (seagoing) 3' 10¾" Fwd, 9' 9½" Aft (landing) 2' 4" Fwd, 7' 6" Aft (light)	4,080 tons (full load) 2,366 (landing)	12.1 Kts (Max)	2,400 mi radius @ 9 Kts	U.S.
5	*APD, High-Speed Trans (Destroyer)	203	One Marine Rifle Co, 4 LCP (R)	306'	37'	12' 7" (Max) plus 4-foot sound dome	2,043 tons (loaded)	23 Kts (Max)	5,000 @ 15 Kts 2,000 @ 23 Kts	U.S.

g. Repair and Supply Craft:

2	LSV, Landing Ship, Vehicle	38 O, 448 men	19-21 LVT's, 29-44 DUKW's, 800 Trs; 1,800 Trs without vehicles	451'-454'	60'	17-18', full load	7,927, full load 5,615 tons, light	19.5, Max	(¹)	U.S.
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¹ Data not available.

■ 614 CHARACTERISTICS OF U. S. CARGO SHIPS:

a. These characteristics are those of the normal ship. Individual ships of the various types are frequently altered to provide passenger space, armor, deck housing, additional ballast, etc., thereby affecting the characteristics stated.

	1	2	3	4	5	6	7	8
1	<i>U. S. M. C. Type</i>	<i>Liberty (EC2) (b)</i>	<i>Victory</i>		<i>C 1B</i>	<i>C1-M- AV1 (Coaster)</i>	<i>T 2E Tanker</i>	<i>ZET1 (Con- verted Liberty Tanker)</i>
			<i>(VC2)</i>	<i>(VC3)</i>				
2	Physical Characteristics:							
	Gross Registered Tonnage.....	7,100	7,600	7,600	6,700	3,860	10,200	7,000
	Length Over-all, in Feet.....	442	455	455	418	339	524	442
	Breadth, in Feet.....	57	62	62	60	50	68	57
	Speed, Sustained.....	11.0	15.5	16.5	14.0	11.0	14.5	11.5
	Draft, in Feet, Loaded to Summer Freeboard.....	28	28	28	28	23	30	28
3	Cargo Capacities:							
	Deadweight Tonnage.....	10,800	10,600	10,850	9,100	5,000	16,760	10,800
	Measurement Tonnage Space							
	Dry Cargo.....	11,500	11,750	11,750	11,400	5,675	375	0
	Refrigerated Cargo.....	0	0	0	0	275	0	0
	Barrel Cargo Capacity.....	5,000	0	0	0	4,000	141,000	65,000
	Number of Holds.....	5	5	5	5	4	9	9
	Ton Capacity of Heaviest Boom.....	50	50	50	30	30	5	5

b. Following additional details relate to the Liberty Ship (EC2). This type is by far the most widely used at the present time.

(1) Capacity Below Deck:

	<i>Hatch No. 1</i>	<i>Hatch No. 2</i>	<i>Hatch No. 3</i>	<i>Hatch No. 4</i>	<i>Hatch No. 5</i>	<i>Total</i>
Hatch Dimensions.....	33'9"x20'	33'9"x20'	35'x20'	33'9"x20'	20'x20'	
Cargo Space in M/Ts—						
Hold.....	900	2,300	1,500	1,300	1,300	7,300
Between Deck.....	1,000	1,100	600	700	800	4,200
Deep Tanks.....	140	270	460			870

(2) Capacity above Deck (examples):

Airplanes: Will carry 24 complete units of P40 boxed, or 4 unboxed P38, or 13 P38 with wings boxed and fuselage unboxed or 13 light Douglas Bombers unboxed.

Tanks: Will carry 10 Heavy or 25 Medium or 30 light.

Landing Craft: Will carry 20-36' type or 18-40' (Navy) type.

Tank Lighters: Will carry 9-50' type or 13-20' ton type.

Locomotives: Will carry 4 Mikado type with tenders.

To carry these loads above deck, special measures must be taken to provide stability, by loading steel in lower holds, and to strengthen deck and hatch covers by special shoring.

■ 615. WEIGHTS AND CUBAGES OF CERTAIN ENGINEER EQUIPMENT:

1	Item	2	3
		Short Tons	Ship Tons
2	Asphalt for 1 mile of road.....	65	76.5
3	Asphalt plant, 10 unit (80-150 tons per hour), trailer Mtd.....	105	308
4	Building, 20'x48', pre-fabricated.....	6.35	19.1
5	Cement.....	1	.53
6	Compressor, 105 cu ft per Min, motorized. (LeRoi Model 105, 1½ ton, 4x4).....	7.4	28.7
7	Compressor, 210 cu ft per Min, trailer Mtd.....	5.1	9.9
8	Compressor, air, 315 CF trailer Mtd (Ingersoll-Rand K-315).....	5.2	11.7
9	Crane, truck Mtd, ¾ yd (Quickway), 5 to 8 ton (Model E with I-H Model U-9).....	17.4	50.3
10	Crane, 20 ton for D-8 tractor.....	4.0	31.5
11	Crushing plant, portable, 7 cu yds/hr (Crated Gruendler Model 1016-A).....	4.2	7.3
12	Crushing and screening plant, crawler Mtd, 100 tons per hour (5 units per plant), (Pioneer Model 1942).....	12	2.2
13	Crushing, screening and washing plant, rock, 150 tons per hour, crawler Mtd (9 units per plant), (Pioneer Engine Works).....	140	240.1
14	Distributor, water, 1,000 gal, motorized.....	9.4	35.9
15	Explosives (Dynamite 60%).....	1	1
16	Fence, 1 mile double-apron, 4 and 2-pace.....	8.5	10.9
17	Generator set, portable, diesel engine driven, skid Mtd, 50 KW (Cummins Model).....	5.9	10.0
18	Grader, power, road, diesel, 12' blade (Caterpillar Model-12).....	14.5	29.4
19	Grader, tractor-drawn, 12' blade, hand operated (Adams Model 124S).....	6.4	64
20	Hangar, steel and canvas, 160'x130'.....	69.7	114.1
21	Lubricator, trailer Mtd (Stewart-Warner Model 2430).....	1.5	4.2
22	Mixer, concrete, 7 cu ft (Const. Mach. Co. Model 7-S).....	2.9	9.8
23	Mixer, concrete, 14 cu ft (Const. Mach. Co. Model 14-S).....	4.5	17.1
24	Plow, tractor, 4 each, 14" bottoms, H. D. (John Deere Model 7).....	2.3	11.3
25	Roller, sheepsfoot, 2 drums (Heil Model TRO).....	3.0	16.8
26	Roller, towed, 13 wheel (Rubber, Wm. Bros. Model 67W).....	2.7	9.1
27	Router, road, 3 tooth (LeTourneau Model B).....	6.5	28.7
28	Runway, material, for one airport (4,500'x125') (562,500 sq ft) 2" surface, 10% bitumen content MC-4 asphalt.....	600	500
29	Runway, Light-bar and rod.....	534	1,165
30	Runway, Heavy bar and rod.....	1,097	1,371
31	Runway, Steel plank.....	1,476	572
32	Runway, steel, for one airport, 4,500'x150' (average).....	1,772	687
33	Sand bags per 100,000.....	16.5	100
34	Saw Mill, 60", 1200 FBM per hour (4'x7' saw table).....	19	40
35	Scraper, road, towed type, cable operated, 6 cu yds (Bucyrus No. 567).....	5.1	37.2
36	Scraper, road, towed type, cable operated, 12 cu yds (Garwood No. 400).....	9.8	53.6
37	Shovel, ½ yd, w/att (Bucyrus Erie Model 1513).....	12.1	26.5
38	Shovel, ¾ yd, w/att (Buckeye Model 70, packed for export).....	22.7	43.8
39	Track, rails, 75 lbs per yd (per mile of track).....	132.0	40
40	Track, turnouts, complete (right and left hand), 75 lbs per yd each.....	9.0	6.3
41	Tractor, D-7, w/dozer (Caterpillar).....	15.3	18.6
42	Tractor, D-8, w/dozer (Caterpillar).....	23.2	49.7
43	Tractor, wheeled, rubber-tired, 23 HP (Case Model S1).....	2.4	5.8
44	Trailer, 8-ton (Fruehauf Model CPT-8).....	4.7	21.6
45	Trailer, 16-ton (Rogar Bros. Model H-16-LS-1, boxed).....	15.9	37.5
46	Trailer, 20-ton (Lacrosse Model DF6-20).....	8.1	30.1
47	Trailer, 40-ton.....	10.1	33
48	Trailer, 60-ton.....	12.9	28
49	Welding machine, 300 Amp, trailer Mtd.....	1.5	7.5



Chapter 7

FIELD ENGINEERING DATA

	Paragraph
Purpose	701
Roads and Bridges	702
Bridge and Ferrying Equipment	703
Landing Strip Construction	704
Water Supply	705
Explosives	706
Field Fortifications	707
Road Blocks and Antimechanized Measures	708
Petroleum Distribution	709



FIELD ENGINEERING DATA

■ **701. PURPOSE.**—These data are intended for use as general guides only. Their application should be varied to conform to local field conditions as required in each specific tactical situation, based on the recommendation, after reconnaissance, of the unit engineer charged with the task.

■ **702. ROADS AND BRIDGES.**—*a. Traffic Capacity.*—See Chapter 2.

b. Load capacity of civilian bridges.—Peacetime design includes high safety factors for unusual loads and deterioration. As a guide for military operations it may be assumed that the ordinary civilian bridge in good condition will carry twice the rated civilian capacity where restrictions are placed on the speed of vehicles and on the number of lanes in use. However, it is advisable to have bridge capacity analyzed by an engineer officer.

c. Construction, maintenance and repair.—Advantage is taken of the available road net, and all means are utilized to repair and maintain existing roads to fulfill military requirements, rather than to build new roads. Except for short sections, new road construction is avoided. In the combat zone, no better road should be maintained or built than is essential for the immediate purpose. Drainage is always vital; dry subgrades obtained by ditches, culverts, and smooth graded crowns are most important. Where graded and drained earth roads are inadequate, as in clay and silt soil under wet conditions, use locally available granular material such as sand, gravel, coral, or cinders for surfacing. In wooded or jungle country use brush, saplings, and logs for corduroy and cover with earth.

d. Plans.—Plans must in all cases provide for engineer reconnaissance, and, where necessary, reinforcement or repair of roads and bridges under our control, and for engineer troops to accompany advance elements into unreconnoitered terrain.

On most roads, bridges are sensitive points which may often become bottlenecks to flow of traffic. Alternate crossings or detour routes should be planned for bridges on important roads.

e. Road Capacity.—The capacity of a road is usually limited by the capacity of the bridges thereon.

f. Marking Bridges.—FM 5-10, 28 January 1944, prescribes that bridges will be marked according to capacity in tons. For instance, a bridge which can carry a vehicle weighing 12 tons is marked "12." This may also be known as a "Class 12" bridge. The same Field Manual also prescribes that each vehicle be marked with its weight-class. For instance a Truck, 2½-ton, cargo, wo/w, SWB weighing 15,100 lbs. (with load), (Par 601) would be marked "8" (15,100/2,000). It may be referred to as a "Class 8" vehicle. For vehicle combinations (trucks and trailers),

702. ROADS AND BRIDGES (Continued):

the weight class is the weight-class of the heavier plus $\frac{1}{2}$ that of the lighter. For instance, if the truck mentioned above (Class 8) tows a 105-mm Howitzer M-2 weighing 4,235 lbs. (Class 2), the weight-class of the combination is $8 + (\frac{1}{2} \times 2)$ or "Class 9." The above conforms generally to British practice.

■ 703. BRIDGE AND FERRYING EQUIPMENT.—*a. Distribution of floating equipment.*¹

	1	2	3	4	5	6	7	8	9
1	Item	Carried by							
		Engr C Bn	Engr Sq	Armd Engr Bn	Abn Engr Bn	Pet Distr Co	Engr Hv Pon Bn	Engr L Pon Co	Engr Tdwy Br Co
2	Boat, assault, M2.....	14						70	
3	Boat, Rcn, pneumatic, 2-man.....	15	12	12		4			
4	Boat, Rcn, pneumatic, 5-man.....				24				
5	Boat, storm.....						16		
6	Bridge conversion set No. 1, Bailey-type floating ²								
7	Bridge, floating, M4 (428 ft) ³								
8	Bridge, foot, M1938 (432 ft).....							1	
9	Bridge, ponton, pneumatic, M3 (250 ft) ⁴							2	
10	Bridge, ponton, 25-ton (210 ft) ⁵						4		
11	Bridge, steel treadway, M2 (864 ft).....								1
12	Ferry set No. 1, infantry support ⁶							4	
13	Ferry set No. 2, treadway, M2 ⁷			1					
14	Raft, infantry support ⁸							12	

¹ Data corrected 1 April 1945. Subject to change. See latest T/O and E.

² Used with fixed panel bridge, Bailey-type and 25-ton ponton bridge to construct floating panel bridge, Bailey-type on 25-ton pontons. Restricted issue.

³ Maximum length of normal floating bridge without trestles.

⁴ Class IV restricted issue.

⁵ Length of normal bridging using the 4 trestles.

⁶ Contains bicycle traveler and other rigging equipment for trail ferry. Issued on basis of 1 per 8 infantry support rafts.

⁷ Contains equivalent of 72 feet of floating treadway bridge with bicycle traveller and other ferrying equipment.

⁸ Contains 6 M2 assault boats and 8 plywood treadways. Can be used to construct 30 feet of floating bridge.

703. BRIDGE AND FERRYING EQUIPMENT:

b. Characteristics of ferrying equipment.¹

1	2	3	4	5	6	7	8
	<i>River crossing means</i>	<i>Construction time^a</i>	<i>Construction party (Engineers)</i>	<i>Maximum loads</i>	<i>Maximum relative stream velocity</i>	<i>Time in min for round trip across stream with width of:²</i>	
						<i>300 feet</i>	<i>500 feet</i> <i>1,000 feet</i>
SMALL BOATS:							
2	Assault boat M2: Single boat 9 paddles		Engineer crew— 3 men	12 passengers or any of the following (in addition to crew): 1 rifle Sqd 1 Hv MG Sqd w/gun and 13 boxes Am 1 81-mm mortar Sqd w/mortar and 50 rounds Am 2 LMG Sqds w/guns and 20 boxes Am 2 60-mm mortar Sqds w/mortars and 72 rounds Am	5 fps	4	6 10
	Two-boat ponton with 22-hp outboard motor		Engineer crew— 3 men	22 passengers (in addition to crew) ⁴	10 fps	.....	6 8
3	Storm boat:		Engineer crew— 2 men	7 passengers or any of the following (in addition to crew): 7 riflemen 1 Hv MG Sqd w/gun and 9 boxes Am 1 81-mm mortar Sqd w/mortar and 24 rounds Am 1 LMG Sqd, 2 extra men, gun and 10 boxes Am 1 60-mm mortar Sqd, 2 extra men, gun and 36 rounds Am	30 fps	.....	3 4

703. BRIDGE AND FERRYING EQUIPMENT:
Characteristics of ferrying equipment¹ (Continued) :

1	1		2	3	4	5	6	7	8	
	River crossing means		Construction time ²	Construction party (Engineers)	Maximum loads	Maximum relative stream velocity	Time in min for round trip across stream with width of: ³			
							300 feet	500 feet	1,000 feet	
FERRIES:										
4	Infantry support raft or trail ferry ⁶	3-ponton		10 min	1 platoon ⁵	2½-ton truck	7 fps ⁷	4	7	12
		5-ponton		15 min		2½-ton truck with 105-mm howitzer	7 fps ⁷			
		7-ponton		20 min		4-ton truck with 2½-ton truck	5 fps ⁷			
5	M3 pneumatic ponton raft	3-float	12-ton floats	1 hr	1 platoon ⁵	4-ton truck	6 fps	4	7	12
			13-ton floats			8 fps				
		4-float	12-ton floats			5 fps				
			13-ton floats			8 fps				
6	M3 pneumatic ponton trail ferry ⁶	3-float	12-ton floats	1 hr	1 platoon ⁵	4-ton truck	7 fps ⁷	4	7	12
			13-ton floats			8 fps ⁷				
		4-float	12-ton floats			8 fps ⁷				
			13-ton floats			9 fps ⁷				

703. BRIDGE AND FERRYING EQUIPMENT:

Characteristics of ferrying equipment¹ (Continued) :

	1			2	3	4	5	6	7	8
7	25-ton ponton raft	5-ponton ^a	Without bow adapters	1 hr	1 platoon ^a	Medium tank M4 (35 tons)	8 fps ⁷	4	7	12
			With false-bow-type adapters			Heavy tank T26E3 (43 tons)	12 fps ⁷			
8	M2 steel treadway raft	4 float	60-foot	1 hr	1 platoon ^a	Medium tank M4 (35 tons)	8 fps	4	7	12
		5 float	72-foot			Heavy tank T26 E3 (43 tons)	8 fps			
9	M4 raft	5-ponton	Half-pontons	1 hr	1 platoon ^a	Motor carriage M7 (24 tons)	7 fps	4	7	12
		4-ponton	Whole pontons			Heavy tank T26E3 (43 tons)	11 fps ⁷			
		6-ponton	Whole pontons			50-ton tank load	9 fps ⁷			

¹ Based on test data available 1 April 1945. Allowances must be made for specific site conditions and state of training of troops in rafting.

² Construction time is from arrival of equipment on site and includes unloading and construction in daylight. It does not include time for preparing landing site, landing stage, or approach roads. Adequate length of accessible river line is assumed. For night, increase time 50%.

³ Round-trip time assumes daylight, men fully trained in rafting, favorable site for loading and unloading, and current not exceeding 5 fps. Rafting is considerably slower if a landing stage is required or if source of power cannot produce maximum speed. Increase times at

least 100% if men are not fully trained in rafting. Two rafts can be used efficiently at one site if river is over 300 feet wide; three if river is over 500 feet wide.

⁴ In rough water or high-velocity currents, 15 passengers is maximum.

⁵ Normal crew to operate raft consists of 1 NCO and 10 men.

⁶ Assume use of auxiliary power to increase speed and for safety in currents.

⁷ With Caution. Load must be placed as far on downstream side of deck as possible.

⁸ With two balk on each side of deck over 3 middle pontons.

703. BRIDGE AND FERRYING EQUIPMENT:

c. Characteristics of floating bridge equipment.¹

1				2	3	4	5	6	7	8	9	10	11	12
River Crossing Means				Construction time in hours for stream width of: ²				Construction party (Engineers)	Posted capacity (tons) for stream velocities of: ³					Traffic capacity one-way: ⁴
				160 feet	300 feet	500 feet	1,000 feet		3 fps	5 fps	7 fps	9 fps	11 fps	
2	Footbridge, M1938			¼	1	½	-----	1 platoon	-----	-----	-----	-----	-----	Day-75 men per min Night-half of day rate
3	M2 assault-boat bridge		Normal	1	1½	2½	-----	1 platoon	8	6	5	-----	-----	300 vehicles per hour
			Reinforced	1½	2	3	-----		13	9	7	-----	-----	
4	M3 pneumatic ponton bridge (13-ton floats)		Normal	2	3	4½	8	1 light ponton company plus 1 general engineer company	12	11	10	-----	-----	300 vehicles per hour
			Reinforced	2½	3½	5	8½		16	16	16	-----	-----	
5	25-ton ponton bridge	Normal	Without bow adapters	4	5½	7	11	1 heavy ponton battalion plus 1 or 2 general engineer companies	24	22	17	13	8	400 vehicles per hour
			With gunwale-type adapters						24	24	22	19	16	
			With false-bow-type adapters						24	24	23	22	20	
		Reinforced with 12-ton floats	Without bow adapters	28	28	21	14		7					
			With gunwale-type adapters	28	28	27	22		17					
			With false-bow-type adapters	28	28	27	24		21					
		Reinforced with pontons	Without bow adapters	42	42	32	17		-----					
			With gunwale-type adapters	42	42	42	28		11					
			With false-bow-type adapters	42	42	42	42		42					
6	M2 steel treadway bridge (18-ton floats)		Normal	2	2½	3	5	1 treadway bridge company plus 1 or 2 general engineer companies	45	45	45	40	35	350 vehicles per hour
7	M4 floating bridge (whole pontons)		Normal	2	2½	3	5	1 bridge battalion plus 1 or 2 general engineer companies	55	55	55	50	45	400 vehicles per hour

¹ Based on test data available 1 April 1945. Allowances must be made for specific site conditions and state of training of troops.² Time is from arrival of equipment on site and includes unloading and construction in daylight. It does not include time for preparing approach roads, assembly sites, and abutments, and for installing anchor cables. Experienced troops and adequate length of accessible river line are assumed. For night, increase time 50%.³ See FM 5-10 for explanation of meaning and use of posted capacities, description of system of bridge and vehicle classification, and charts giving conditions under which specific vehicles can cross standard bridges. Capacities are subject to revision by further tests.⁴ Traffic capacity is for daylight. Decrease 50% for night.

703. BRIDGE AND FERRYING EQUIPMENT:

d. Fixed highway bridges.¹

1	1	2			3			4							5		6	7	8			
		Box-girder steel fixed bridge H-10 (knock-down)			Box-girder steel fixed bridge, H-20			Panel steel fixed bridge, Bailey type, M1							10-ton trestle bridge ¹		Semipermanent steel fixed bridges					
2	Length of one unit	72 feet (2-truss)			125 feet (2-truss)			150 feet (double-double)							75-feet (each additional unit provides 60 feet)		30-foot I-beam span	60-foot I-beam span	90-foot truss span			
3	Posted ca- pacity in tons ²	Span (ft)	Type			Span (ft)	Type			Span (ft)	Type							Nor- mal	Rein- forced			
			2-truss	3-truss	4-truss		2-truss	3-truss	4-truss		Single- single	Double- single	Triple- single	Double- double	Triple- double	Double- triple	Triple- triple					
			tons	tons	tons		tons	tons	tons		tons	tons	tons	tons	tons	tons						
	36	37	54	52	37½	70	70	70	40	50												
	48	25	34	34	50	70	70	70	50	36												
	60	18	24	25	62½	51	70	70	60	28	64											
	72	13	18	20	75	41	56	58	70	21	53											
	84	10	13	15	87½	32	44	47	80	16	43	62										
	96	.....	10	11	100	25	35	39	90	12	33	53										
					112½	19	28	32	100	9	26	43	72									
					125	14	22	26	110	6	20	36	61									
					137½	.....	17	20	120	.....	16	29	51	76								
					150	.....	.....	16	130	.....	12	24	42	66								
									140	.....	9	18	33	56	71							
									150	.....	6	13	26	45	61							
									160	.....	10	20	37	52	52							
									170	.....	.....	8	16	30	43	72						
									180	.....	.....	.....	12	24	35	62						
									190	.....	.....	.....	8	18	28	52						
									200	.....	.....	.....	5	12	21	43						
									210	.....	.....	.....	.....	8	15	34						
									220	.....	.....	.....	.....	.....	10	24						

703. BRIDGE AND FERRYING EQUIPMENT:
Fixed highway bridges¹ (Continued):

	1	2	3	4	5	6	7	8
1		<i>Box-girder steel fixed bridge H-10 (knock-down)</i>	<i>Box-girder steel fixed bridge, H-20</i>	<i>Panel steel fixed bridge, Bailey type, M1</i>	<i>10-ton trestle bridge²</i>	<i>Semipermanent steel fixed bridges</i>		
4	Packaged weight of one unit in short tons ⁴	19	48	100	10	Steel 6.5 Lumber 6.4	Steel 22.9 Lumber 12.4	Steel 31.0 Lumber 18.9
5	Packaged cuage of one unit in ship tons ^{4,5}	24	115	145	15	Steel 7.5 Lumber 8.0	Steel 20.3 Lumber 15.7	Steel 48.6 Lumber 22.1
6	Issue	Restricted issue	Class IV Restricted issue	Class IV Controlled item	2 per light pontoon company. Also Class IV	Class IV Restricted issue		
7	Transportation for one unit	4 2½-ton trucks w/3 2-wheel trailers	15 2½-ton trucks or 7 5- to 6-ton tractor trucks w/semi- trailers	21 2½-ton trucks w/ 21 2-wheel trailers	2 4-ton or 2½- ton trucks w/ 2 2-wheel trailers	2 8-ton full flat bed trailers w/ prime movers	4 8-ton full flat bed trailers w/ prime movers	7 8-ton full flat bed trailers w/ prime movers
8	Man-hrs per unit ⁶	60	600	600	60	450	1,000	2,000

¹ Based on data available 1 April 1945.

² The 10-ton trestle bridge is limited to gap where bridge roadway is not more than 12 feet above trestle footings.

³ See FM 5-10 for explanation of the meaning and use of posted capacities, a description of the system of bridge and vehicle classification, and charts giving conditions under which specific vehicles can cross standard bridges.

⁴ Values are approximate only and are subject to change due to revised packaging and changes in components of sets.

⁵ 1 ship ton = 40 cubic feet.

⁶ Does not include time for preparation of approach roads, assembly sites, and elaborate abutments. Adjustments must be made for specific site conditions.

703. BRIDGE AND FERRYING EQUIPMENT:

e. Railway bridging equipment.¹

1	2	3	4	5	6	7
	<i>I-beam railway bridge</i>	<i>Unit construction railway bridge</i>	<i>Through truss railway bridge</i>	<i>Light standard (L-type) unit steel trestle</i>	<i>Standard (T-type) unit steel trestle</i>	<i>V-type unit steel trestle</i>
UNIT:	SPANS: 17, 21, 27, 31, and 35 feet	70-foot 2-girder deck and through spans ²	123-foot span ²	None Ordered by parts as required	None Ordered by parts as required	None Ordered by parts as required
USE:	SPANS 17 to 35 feet	SPANS: 50 to 85 feet	SPANS: 90 to 150 feet	Piers for <i>I-beam</i> and unit construction bridges	Piers for through truss bridge	Marine piers, quay repairs, and railway viaducts
Capacity ³	E-45 loading	E-45 loading	E-45 loading	E-45 loading	E-45 loading	45 tons E-35 load-loading
Issue	Class IV Restricted issue	Class IV Restricted issue	Class IV Restricted issue	Restricted issue	Restricted issue	Restricted issue
Man-hours ⁴	400-600	70-foot deck span 1300	70-foot through span 1500	120-foot span No Data	150-foot span 10,000	No data
Shipping weight (short tons)	Span (feet) 17 21 27 31 35 3.1 5.0 6.9 10.0 13.2	35.6	49.8	140	173	Varies with type of pier. See TM 5-374
Cubage (ship tons)	3.2 3.6 4.8 7.9 8.9	22.5	32.5	140	171	C _s =0.7 W _s ⁶ C _s =0.5 W _s ⁶
						Steel: W _s =0.2 HN ⁶ Decking and fendering: W _L =1.5 M Steel: C _s =0.7 W _s ⁶ Decking and fendering: C _L =1.6 M

703. BRIDGE AND FERRYING EQUIPMENT:

*e. Railway bridging equipment*¹ (Continued):

¹Data is based on information available 1 April 1945.

²Sets are also provided for conversion to other spans and types of construction. Erection equipment is ordered separately. See TB ENG 12 and TB ENG 56.

³Maximum speed is 40 mph. This must be reduced on 130- to 150-foot through truss spans. See TM 5-372.

⁴Tentative. Value is from arrival of equipment on the site and includes unloading and construction in daylight and laying of track. For night, increase 50%. Time for erection of piers, approaches, and approach spans is not included. No data is available on V-trestle railway viaducts.

⁵Value is based on favorable conditions and experienced crew, and does not include preparation of foundations.

⁶Formulas for typical V- and T-shaped piers are approximately only.

C_L=cubage in ship tons of decking and fendering.

• C_s=cubage in ship tons of steel only.

H=average height in feet of columns.

M=number of 10- by 10-foot bays.

N=number of columns.

W_L=weight in short tons of decking and fendering.

W_s=weight in short tons of steel only.

■ 704. LANDING STRIP CONSTRUCTION.

a. Landing mat data:

	1	2	3	4
1	Item	Steel pierced Plank	Aluminum pierced Plank	Sommerfeld
2	Number Sheets per bundle.....	30	30	1 roll
3	Bundle Dimensions.....	1'1½"x10"x1'2"	1'5"x10"x1'3"	2' dia x10'10"
4	Number Bundles per 150'x5,000' runway.....	2,000	2,000	964 rolls
5	Weight per 150'x5,000' runway (tons).....	1,928	975	440
6	Cargo space per 150'x5,000' runway (cu ft).....	32,084	35,418	36,111
7	Cargo Space per 150'x5,000' runway (M/T).....	802.1	885.5	802.8
8	Area covered per cu ft cargo space (sq ft).....	23.1	21.2	20.8
9	Average laying speed (sq ft per man hour).....	125	250	175

b. Prefabricated bituminous surfacing data:

(1) Per roll: Weight = 350 lbs.

Area covered = 1,000 sq ft (based on single coverage of 40-inch roll with no overlap.)

(2) Per 150'x5,000' runway: Cargo space = 17,813 cu ft, weight = 356 tons (based on 50% overlap of 40-inch rolls plus 25% for waste and normal maintenance requirements).

(3) An average laying speed (based on 50% overlap): 210 sq ft per man hour, or 4,600 sq ft per machine hour.

■ 705. WATER SUPPLY.—a.—Troop requirements.—Average requirements¹ for water by troops under several conditions of service, expressed in gallons per unit (man, animal, vehicle) per day:

	1	2	3	4	5	6
1	Item	In battle	March and bivouac	Temporary camp	Semi-permanent camp in rest area	Cantonment
2	Men.....	½-2½	2	5	30	50
3	Animals.....	3-5	10	10	30	50
4	Motor vehicles..	¼-1	¼-1	¼-1	¼-30	¼-50

¹ Modify according to circumstances, especially in hot climates. Maximum requirement may exceed the average by from 15 to 100 per cent.

² ½ gallon per man and 3 gallons per animal is the absolute minimum, for not more than three days.

³ Operations in Libya indicated that 2½ gallons per man and 6 gallons per radiator should be provided in similar climates.

705. WATER SUPPLY:

b. Capacity of water-supply equipment.—

1	1	2	3	4	5	6
	Unit	No. of sets	Gallons per minute under 50 ft head		Storage Capacity	Daily Production (20 hr day)
			Pump	Filter		
2	Engr C Bn.....	4 ¹	880	40	24,000	33,200
3	Armd Engr Bn.....	4 ¹	880	40	24,000	33,200
4	Abn Engr Bn.....	4 ¹	880	40	24,000	33,200
5	Engr Sep Bn.....	1 ¹	220	10	6,000	8,300
6	Engr Hv Pon Bn.....	1 ¹	220	10	6,000	8,300
7	Engr Avn Bn.....	1 ¹	220	10	6,000	8,300
8	Abn Engr Avn Bn.....	1 ²	110	10	3,500	8,300
9	Engr Boat & Shore Regt.....	1 ¹	220	10	6,000	8,300
10	Engr Top Co, Corps.....	1 ²	110	10	3,500	8,300
11	Engr Top Bn, Army.....	1 ²	110	10	3,500	8,300
12	Engr Avn Top Co.....	1 ²	110	10	3,500	8,300
13	Engr AF Hq Co.....	1 ²	110	10	3,500	8,300
14	Engr Gen Sv Regt.....	2 ¹	440	20	12,000	16,600
15	Engr W Sup Co (sand filters).....	8 ³	1,320	480	72,000	376,000
16	Engr W Sup Co (diatomite filters).....	9 ⁴	2,475	450	108,000	468,000

¹Each set includes:

- 1 portable purification unit of 10 gallons per minute purifying capacity and 55 gallons per minute pumping capacity.
- 3 pumps of 55 gallons per minute capacity.
- 2 canvas tanks of 3,000 gallons capacity.

²Each set includes:

- 1 portable purification unit of 10 gallons per minute purifying capacity and 55 gallons per minute pumping capacity.
- 1 pump of 55 gallons per minute capacity.
- 1 canvas storage tank of 3,000 gallons capacity.
- 2 canvas storage tanks of 250 gallons capacity (for reproduction purposes in topographic units).

³Each set includes:

- 1 mobile purification unit with a capacity of purifying 60 gallons of water per minute.
- 3 pumps of 55 gallons per minute capacity.
- 3 canvas tanks of 3,000 gallons capacity.

⁴Each set includes:

- 1 portable diatomite filter of 50 gallons per minute purifying capacity.
- 5 pumps of 55 gallons per minute capacity.
- 4 canvas tanks of 3,000 gallon capacity

⁵Daily production includes retreatment of water which reduces tankage available for filtered water storage.

*c. Equipment issued to troop units.—*Organizations are supplied with five-gallon cans for carrying water. Vehicle carrying capacities are:

2½-ton truck.....	100 cans (filled)
1½-ton truck.....	60 cans (filled)
1-ton trailer.....	40 cans (filled)

■ 706. EXPLOSIVES.—Explosives included in organic demolition sets:¹

Unit	Pounds of Explosive
Engr C Bn -----	9,950
(Hq & Sv Co) -----	(5,000)
(Ltr Co ea) -----	(1,650)
Armd Engr Bn -----	10,040
(Hq & Hq Co) -----	(5,090)
(Ltr Co ea) -----	(1,650)
Airborne Engr Bn -----	3,960
(Hq & Sv Co) -----	(600)
(Prcht Co ea) -----	(1,680)
(Gli Co ea) -----	(840)
Hq Co, Inf Bn -----	40
Cav Rcn Tr -----	320

¹Additional explosives carried as required.

■ 707. FIELD FORTIFICATIONS.—(See also FM 5-15).

a. Responsibility.—Generally, defensive positions are laid out and built by troops which are to occupy the area. Engineers furnish technical advice and assistance, and are responsible for works requiring special skills or equipment. When a defensive position is to be prepared before arrival of troops who will occupy the position, Engineers may be assigned this task.

b. Priority of work.—The order in which the various defensive measures are to be executed is expressed in orders in the form of priorities. The assignment of priorities does not prevent simultaneous work on several tasks. After the location of combat emplacements has been fixed, the normal priority is:

(1) Clearing fields of fire and removal of objects masking observation.

(2) Laying of antitank mine fields and execution of important demolitions such as bridges.

(3) Providing for adequate signal communication and observation systems.

(4) Preparing individual shelter and emplacement of weapons.

(5) Preparing obstacles (other than mine fields) and other demolitions.

(6) Preparing routes for movement of reserves and for supply and evacuation.

c. Camouflaging.—Camouflaging and other provisions for concealment precede or are concurrent with other work. Construction of dummy works is concurrent with other work.

d. Works (figures given are for daylight work; for work at night, increase labor by 50%).—(1)—*Trenches.*—In estimating for fox holes or

707. FIELD FORTIFICATIONS (Continued) :

other type trenches allow 15 cubic feet per man-hour, average soil, using pioneer tools.

(2) *Obstacles. (Against personnel).*—(a) Single belt of double-apron fence, 1,000 yards long, requires approximately 5 tons of materials and 120 man-hours of labor. Work capacity of an experienced 3-squad platoon in 8 hours is approximately 2,250 linear yards of double-apron fence.

(b) Single belt of triple-belt barbed-wire concertina roll, 1,000 yards long requires approximately 8 tons of materials and 60 man-hours of labor. Work capacity of an experienced 3-squad platoon in 8 hours is approximately 4,500 linear yards to triple-belt barbed-wire concertina fence.

(c) The approximate length of wire entanglement required to provide minimum protection may be found by multiplying the length of front by $1\frac{1}{4}$ to determine the length of tactical wire entanglement, and by 5 to determine the length of protective wire entanglement.

(3) *Clearing.*—Four man-hours of labor for clearing 100 square yards of brush and a few trees up to 12-inches in diameter; if brush only, 2 man-hours.

(4) *Machine-gun emplacement.*—Two foxhole type requires three (3) man-hours of labor.

e. Antitank mines, prescribed loads.—See Chapter 3.

f. Intrenching equipment.—Nine sets of intrenching equipment of pioneer tools are carried in the Infantry Division. Three sets are with each Infantry Regiment. The Infantry set weighs 3,100 pounds and has a cubage of 214 cubic feet. The principal item of intrenching equipment set are:

	<i>Infantry</i>
Axes -----	26
Bars, crow -----	4
Mattocks, pick -----	125
Sandbags -----	500
Saws, crosscut, hand -----	26
Shovels, D-handled -----	250
Tape, tracing, 500-ft rolls -----	6

The engineer combat battalion has squad and platoon carpenter, demolition and pioneer sets, plus: 58 axes, intrenching; 117 mattocks, pick; and 357 shovels, intrenching.

■ 708. ROAD BLOCKS AND ANTIMECHANIZED MEASURES.—(See also FMs 5-25, 5-30 and 5-31.)

a. Classification of barriers.—Barriers are classified as to location, as covering, flank, battle position, or rear area; and as to type, as natural or artificial.

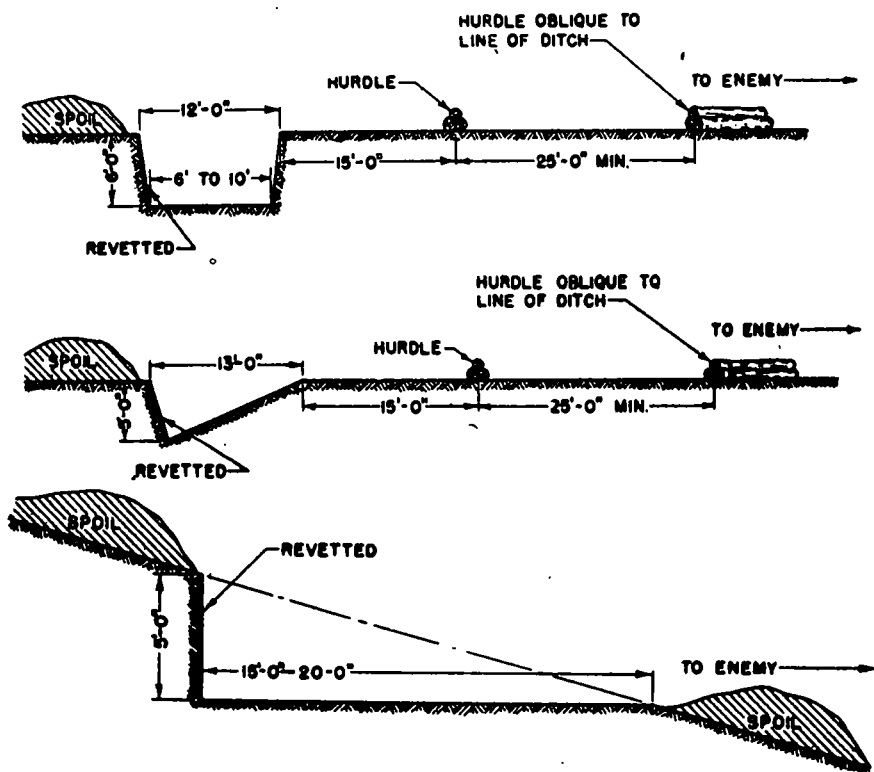
b. Description of roadblocks.—Common types of roadblocks are:

(1) Antitank mine. Mines are placed across a road at a defile in a pattern similar to that in a hasty mine field except with a density of 3 mines per yard.

(2) Bridge demolition. Requires from 5 to several hundred man-hours depending on type of structure, explosives available, and degree of destruction desired. A bridge prepared for demolition but not actually destroyed can be used freely by our own forces until demolition must be executed to prevent seizure by the enemy. Orders must be definite as to when to destroy the bridge.

(3) Antitank ditch. A ditch about 6 feet deep and 12 feet wide across the road, can be constructed by one platoon in $2\frac{1}{2}$ -3 hours with hand tools. Using the power earth auger and explosives a suitable ditch can be completed in about $\frac{1}{3}$ of that time.

ANTITANK DITCHES



708. ROAD BLOCKS AND ANTIMECHANIZED MEASURES (Continued) :

(4) Road craters. A road crater can be constructed by 1 squad in 1½ to 2 hours using explosives. Antitank and antipersonnel mines will increase the effectiveness of the crater.

c. Continuous artificial obstacles.

1	1 <i>Obstacle</i>	2 <i>Construction</i>	3 <i>Installation</i>	4 <i>Rate of installation</i>
2	Protective (hasty) mine field	See Sub-Par d, below.	Placed across avenues of approach. Concealed. Reinforce natural obstacles.	See Sub-Par d, below.
3	Tactical (deliberate) mine field			
4	Antitank ditch, multiple charge method	10 feet deep—30 feet wide	Constructed across wide avenues of approach.	One squad with power earth auger and demolition equipment can complete 100 yards in 12 hours.
5	Antitank ditch, hand tools	6 feet deep—12 feet wide		One platoon under average conditions can complete 100 feet in 10 hours.
6	Log post field	Substantial posts set in the ground, density of one post per linear foot, 2½ to 3½-foot projection.		One squad with pile driver under average conditions can complete 50 feet in 1 day.
7	Contamination by persistent chemicals (when authorized)	Contaminate artificial obstacles to impede removal. Contaminate roads and areas as part of a barrier mission.	1 or more chemical mines per obstacle. 200 mines per mile of road. Airplane spray: average area covered by one airplane—800 yards long—80 yards wide.	Road contamination: one squad can contaminate one mile of road in 1½ hours. See Pars 610-611 for contamination munitions.

d. Antitank Mine Fields (See FM 5-31).

(1) An antitank mine field is the best quickly placed obstacle to enemy mechanized vehicles. The mine field consists of one or more mine belts. To be most effective mine fields must:

- Be sited to connect natural obstacles, thereby saving time and material and giving a continuous barrier.
- Be sited to secure maximum surprise.
- Be coordinated with infantry and antitank gun positions so the mine field can be covered by small arms and antitank fire.

(2) Antitank mine fields are of two types: protective (hasty) and tactical (deliberate).

708. ROAD BLOCKS AND ANTIMECHANIZED MEASURES (Continued):

- (a) *Protective mine fields* are laid on order of the local unit commander (Co, Bn, or Regt) and are for the local protection of that unit. They are usually laid by troops of the unit protected. Protective mine fields are usually shallow in depth, rapidly laid, and generally do not contain either antipersonnel or booby-trapped mines.
- (b) *Tactical mine fields* are laid in accordance with a barrier plan approved by division, corps, army, or independent commanders. They are for the protection of the division or larger unit as a whole and are carefully located to break up and canalize the enemy's attack formations and to hold him in areas covered by antitank and automatic weapons. Tactical mine fields are usually of greater depth, with mines buried, and generally contain both booby-trapped and antipersonnel mines. Protective mine fields may be converted and incorporated into tactical fields. Tactical fields are laid by engineers, specially trained troops, or other troops with engineer supervision.

(3) All mine fields, when laid, will be marked by standard marking methods. A location sketch of any mine field laid will be immediately forwarded by the laying unit through channels to higher headquarters. Detailed records to facilitate later clearing of the mine field are sent by the laying unit to the division engineer section, which sends copies of the record to the corps engineer section.

(4) Mine field data for 1,000 yards of mine belt:

- (a) Mines required (density $1\frac{1}{2}$ mines per yard) ----- 1,500 mines.
- (b) Placing and burying, by daylight ----- $5\frac{1}{2}$ platoon hours.
- (c) Booby-trapping and laying antipersonnel mines, add to time ----- 50%
- (d) If work is done at night, increase time by ----- 50%
- (e) In general, mines will be uncased and fused at a forward supply point.
Time required for 1,500 mines ----- 1 platoon hour.
- (f) Clearing (will vary between wide limits) ----- 150 to 300 mines per platoon hour.

708. ROAD BLOCKS AND ANTIMECHANIZED MEASURES (Continued).

(g) Weights and vehicle carrying capacities for antitank and antipersonnel mines are:

1	1	2	3	4	5	6	7	8	9
	AT Mines	Wt, ea, lbs		1½-T Trk		2½-T Trk		1-T Trk	
		Cased	Uncased	Cased	Uncased	Cased	Uncased	Cased	Uncased
2	M1A1	14.7	10.67	200	281	340	468	135	187
3	M4	13.8	10.67	215	281	360	468	145	187
4	M5	22.2	14.5	132	206	224	344	88	137
5	M6	30.0	20	100	150	166	250	66	100
6	M7	6.5	4.5	456	666	768	1,111	304	444
7	Anti-Personnel mines								
8	M2A1	9.34	6.5	320		530		210	
9	M2A2	9.34	6.5	320		530		210	
10	M2A3	7.66	6.5	390		650		260	
11	M3	12.2	9.6	246		408		162	

■ 709. PETROLEUM DISTRIBUTION. Petroleum is distributed in bulk and as a packaged product. Storage and transportation of bulk fuels is handled principally by Engineer Petroleum Distribution Companies. The breakdown of bulk fuels into packages and handling of packaged petroleum products are usually the responsibility of the Quartermaster Corps.

a. *Bulk petroleum.*—Engineer Petroleum Distribution Companies are organized to build and operate 120 miles of pipe line with associated tanks. General data is contained in the following tables. (See Par 314c).

b. *Tonnages per mile of line and pumping capacities of military pipe lines:*

Line size in inches	Short tons per mile of line	Ship tons per mile of line	Pumping capacity in barrels per day ^{1 2}
4	14.5	20.0	3,850
6	28.0	43.0	7,700

¹ Operating at designed capacity 80% of time.

² One barrel = 42 US gallons.

709. PETROLEUM DISTRIBUTION:

c. Storage tank data:

	1	2	3	4	5	6	7	8	9
1	Capacity (barrels)	Dimensions in feet		Number of rings	Maximum number of men in crew	Erection time in man hours 1	Erection time in crew- days (10- hour days) 1	Short tons	Ship tons
		Height	Dia- meter						
2	10,000	24	55	3	25	800	3.2	41.5	50.6
3	5,000	24	39	3	20	450	2.25	22.0	26.6
4	1,000	16	22	2	12	180	1.5	5.6	6.5
5	1,000	8	30	1	12	120	1.0	8.0	9.2
6	500	8	22	1	6	60	1.0	3.75	5.0
7	250	8	16	1	6	40	0.65	2.4	3.2

¹ Trained crews.

P-3600—(7)



Chapter 8

SIGNAL COMMUNICATION DATA

	Paragraphs
SECTION I. Responsibility	801-803
II. Signal Intelligence and Communications Security	804-808
III. Use of Signal Communications	809-814
IV. Signal Center	815-818
V. Radio Communication	819-827
VI. Visual Communication	828-834
VII. Wire Communication	835-842
VIII. Tables of Signal Equipment	843-844

SIGNAL COMMUNICATION DATA

SECTION I

RESPONSIBILITY

■ 801. GENERAL.—*a.* In general, Signal Corps troops install, operate and maintain signal communication—

- (1) at Division, Corps and Army Headquarters,
- (2) at Wing and higher headquarters for Air Force units,
- (3) between widely separated Air Force units,
- (4) for Aircraft Warning Systems,
- (5) for most communication zone and zone of the interior organizations.

b. Regiments or group and smaller units of ground and air troops usually have communication personnel in their headquarters unit.

c. In any unit, signal communication is a responsibility of the commander. His signal communication troops furnish signal communication:

- (1) at his own command post,
- (2) to (but not including) the next lower echelon or command post,
- (3) to units he supports,
- (4) between next subordinate units when so directed.

d. For further details see AR 105-15.

■ 802. CLASSIFIED INFORMATION.—The safeguarding of classified military information is the responsibility of all military personnel. Within the limitations indicated in Par 811, the originator of a message is responsible for its classification, unless special instructions governing particular cases have been received from higher authority. He is also responsible for assigning proper precedence to the message before forwarding it for cryptographing and transmission (see Par 812 and AR 380-5).

■ 803. REFERENCES:

FM 1-45, Air Corps Field Manual, Signal Communication.

FM 11-5, Missions, Functions, and Signal Communication in General.

FM 11-10, Organizations and Operations in the Infantry Division.

FM 11-15, Organizations and Operations in the Cavalry Division and Cavalry Corps.

FM 11-17, Organizations and Operations in the Armored Division and Armored Corps.

FM 11-20, Organizations and Operations in the Corps, Army, Theater of Operations, and GHQ.

FM 11-25, Aircraft Warning Service.

FM 11-35, Signal Corps Intelligence.

FM 17-70, Signal Communication for Armored Units

FM 24-5, Signal Communication: methods and technique of signal communication, with special emphasis on that of divisions and smaller units.

FM-24-9, Combined Radio Telephone (R/T) Procedure.

FM 24-10, Combined Radio-Telegraph (W/T) Procedure.

FM 30-25, Counterintelligence.

FM 31-35, Aviation in Support of Ground Forces.

TC 30, Tactical Air Command, Organization and Employment.

TC 17, Air Ground Liaison.

For a list of technical publications, see the TM 11-series in FM 21-6.

SECTION II

SIGNAL INTELLIGENCE AND COMMUNICATION SECURITY

■ 804. SIGNAL INTELLIGENCE.—Signal intelligence includes all information of the enemy obtained from his communications by radio or other electrical means, by the detection of secret inks and other disguised writing, by the solution of codes and ciphers, and by the interception of sound and visual communication.

■ 805. COMMUNICATION SECURITY.—*a.* Communication security includes all measures that prevent or delay the enemy from gaining military information from our communications.

b. Communication security can be achieved only if supported by the personal effort of each individual to maintain the highest standards in procedure and operation and to observe careful personal censorship. Staff officers are in a position where they must exercise particular discretion.

c. Communication security consists of three components:

- (1) Physical security.
- (2) Cryptographic security.
- (3) Transmission security.

■ 806. PHYSICAL SECURITY.—*a.* Physical security consists of the protection of communication equipment and classified documents (including plain language copies of messages) from capture, salvage, loss, unauthorized inspection, and photography.

b. Each staff officer should ascertain that every person to whom any classified information is entrusted has read and understands AR 380-5.

c. Important considerations for physical security include the following:

(1) Limit availability of classified material, particularly codes and ciphers, to authorized personnel. Only personnel investigated as to character, background, and loyalty and favorably reported may be authorized to perform duties in connection with secret and confidential cryptographic systems. (Exceptions are stated by the War Department.)

(2) Store classified material in room protected against unauthorized entrance. Registered documents must be stored in a three-combination safe or the equivalent.

(3) Limit to a minimum the classified material exposed to capture in advanced areas.

(4) Make a simple detailed plan for prompt destruction of all classified material when capture becomes imminent.

(5) Make prompt accurate report to higher authority of such destruction by the fastest means available.

■ 807. CRYPTOGRAPHIC SECURITY.—*a.* Cryptographic security consists of the provision and use of technically sound cryptographic systems, and the strict observance of instructions designed to prevent or delay their solution by the enemy. *Time spent in cryptographing yields high return in security.*

b. The use of cryptographic systems other than those authorized by the War Department or Theater Headquarters compromises security. Most such systems are susceptible to easy solution and give the user a false sense of security.

c. Instructions furnished with each code or cipher system must be carefully followed.

d. Hazards to cryptographic security may be minimized by adhering to the following rules in drafting messages:

- (1) Be brief and concise.
- (2) Avoid stereotyped phraseology particularly at beginning and end of message.
- (3) Never quote documents available to the public.
- (4) Never send identical messages in different cryptographic systems.
- (5) Paraphrase messages to be sent in more than one cryptographic system.
- (6) Paraphrase messages which are to receive distribution in plain language.

e. A cryptographic security officer should be designated at each headquarters as a consultant on cryptographic security and to enforce measures adopted to insure cryptographic security.

■ 808. TRANSMISSION SECURITY.—*a.* Transmission security consists of:

- (1) Limiting the enemy ability to intercept our communications.
- (2) Preventing the enemy from using our communications systems for navigational aids or for purposes of deception.

b. Listed below are the means of communications in order of preference from the point of view of transmission security, subject to variation in each tactical situation:

- (1) Messenger.
- (2) Approved mail service.
- (3) Teletypewriter.
- (4) Wire telegraphy.
- (5) Wire telephony.
- (6) Visual.
- (7) Animals and birds.
- (8) Radio telegraphy.
- (9) Radio telephony.
- (10) Sound.

808. TRANSMISSION SECURITY :

c. Radio telegraph and radio telephone transmissions are particularly susceptible to:

- (1) Interception.
- (2) Position finding.
- (3) Traffic analysis.
- (4) Deception.

d. The staff officer who personally uses the radio telephone must act as his own security officer. The following points must be borne in mind:

- (1) Use proper radio telephone procedure (FM 24-9).
- (2) Pre-plan the content and wording of each transmission.
- (3) Avoid use of plain language especially for places, units, or names by substituting authorized prearranged message codes and map co-ordinate codes.
- (4) Avoid the use of official titles (i.e., CG, CO, etc.).
- (5) Employ authentication of the other party to the conversation.

e. A high standard of discipline is essential among operators to obtain signal security. Training in discipline and correct procedure must be continuous.

SECTION III

USE OF SIGNAL COMMUNICATIONS

■ 809. COORDINATION.—To obtain efficient signal communication, it is essential that there be adequate coordination between the commander's staff and the signal officer, and that the signal officer be fully cognizant of the details of contemplated operations.

■ 810. CHOICE OF MEANS.—*a.* No one means of signal communication possesses all the desirable military characteristics of *reliability, security, flexibility* and *speed*; several means of communication must always be provided.

b. The choice between a written message and a telephone call should be based on consideration of the following factors:

Need for record

Need for discussion

Need for speed

Need for secrecy

Availability of facilities

Traffic load on available facilities.

If the result desired can be obtained as well by means of a message as compared to telephone, write the message.

c. Due to the normal scarcity of technical communication facilities in field operations it will usually be necessary to restrict use of the wire telephone to those cases where direct personal discussion between commanders and senior staff officers is necessary. Reduction of messages to writing will usually reduce misunderstanding and misinterpretation.

d. Improper use of radio telephone has been the greatest single cause for combat inefficiency due to signal communications. It is imperative that anyone who holds radio telephone conversations be familiar with the principles contained in Par 807*d*.

■ 811. RELATION OF SECURITY TO OTHER SIGNAL COMMUNICATION REQUIREMENTS.—*a.* The fundamental requirements of military signal communication are (1) reliability, (2) security, (3) flexibility, and (4) speed.

b. *Reliability* is paramount.

c. The conflicting requirements of *speed* and *security* vary according to circumstances. Staff officers and signal communication personnel must be guided by general principles, applied with full appreciation of existing circumstances, rather than by rigid regulations. Reasonable security at all times should be the goal. In general, in a *strategic* situation some *speed* may be sacrificed to meet the greater secrecy requirements, while in *tactical* situations secrecy is often of secondary importance and may be sacrificed to meet the greater speed requirements. Various cryptographic devices and methods are available to meet both situations.

■ 812. PREPARATION OF MESSAGES.—*a.* Since the writer does not ordinarily know by what means a message will be transmitted, every message should be prepared in the briefest practicable telegraphic form to insure speedy transmission.

b. All messages are classified by the originator. In tactical operations, actual or simulated, all messages not classified and marked "Secret" will be regarded as "Confidential" but need not be so marked. Messages classified "Secret" should show on the face of the message the authority for such classification.

■ 813. WRITING MESSAGES.—*Example:*

THESE SPACES FOR MESSAGE CENTER ONLY		
TIME FILED ②	MSG CEN No.	HOW SENT ①
MESSAGE		
(SUBMIT TO MESSAGE CENTER IN DUPLICATE)		(PRECEDENCE)
NO. ② 19	DATE ③ 6 May 1943	
TO ④ CO 12 Inf		
⑤ 3 BN 8 INF IDENTIFIED RJ AT 889-674 ⑥		
CG 1 INF DIV		
OFFICIAL DESIGNATION OF SENDER		⑦ 1415 H TIME SIGNED
⑧ R. Jones, Lt Col G-2 SIGNATURE AND GRADE OF WRITER		

(M) Leave blank. For Message Center use.

(O) Leave blank. For Operator's use.

* Precedence of transmission of messages—Routine messages transmitted in the order received.

Messages marked for special precedence of transmission are sent in the order shown in TABLE NO. 1.

* Enter writer's message serial number for his reference.

* Enter date message is written; day, month, (year).

* Enter after "To": CG or CO and unit. NOT staff section or personal name. [Staff reference may be indicated in body of message (not at beginning or end) IF ESSENTIAL for delivery.]

* Text of message. Be brief, concise, complete, and legible. Use only authorized abbreviations (FM 21-30 and school memorandum).

* AR 380-5, Par 46, indicates that figures are habitually spelled out. In divisional units, this practice is seldom followed.

* Enter CG or CO and unit NOT staff section or personal name. [Staff reference may be indicated in body of message (not at beginning or end) IF ESSENTIAL for delivery.]

* Enter time in 24-hour clock system and time zone suffix.

* Signature of writer with rank and staff duty. (For reference only; not transmitted.)

813. WRITING MESSAGES (Continued):

TABLE NO. 1—PRECEDENCE OF TRANSMISSION OF MESSAGES¹

<i>Precedence</i>		<i>Sequence</i>	<i>Usual content</i>
<i>Written</i>	<i>Abbreviated</i>		
URGENT	O	Sent at once, interrupting all others.	Enemy contact reports. Immediate operations. Flash messages.
OPERATIONAL PRIORITY	OP	Sent after Urgent messages.	Operations messages including aircraft movements. NOT for ordinary troop movement messages.
PRIORITY	P	After Urgent and Operational Priority messages.	Operations messages. Other important messages. Highest administrative message precedence.
ROUTINE	R (?)	Sent after Urgent Operational Priority and Priority Messages.	Normal messages.
DEFERRED	D	Sent after all other messages, but not longer than 24 hours after filing.	Messages not requiring immediate delivery; 24-hour delivery assured.

¹ Over classification in precedence will result in the failure of the entire message classification system and will cause all messages to be handled alike, regardless of individual message priorities.

² No marking on the Msg.

■ 814. USE OF CRYPTOGRAMS.—For a complete discussion, see AR 380-5, FM 24-5, and Section II of this chapter. All messages to be transmitted by radio, or other means when danger of hostile interception exists, are cryptographed. Exceptions are:

a. When the tactical situation is such that time cannot be spared for cryptographing; when the information to be transmitted, if intercepted by the enemy, cannot be acted upon in time to influence the situation. Then the commanding officer or his authorized representative may order the transmission of radio messages in plain language. Such written messages will be marked "Send in clear" over the signature of the commanding officer or his authorized representative. Responsibility for transmission by radio telephone in the clear rests with the person making the transmission.

b. Transmission of artillery fire control messages in the clear is normal.

c. Secret messages are cryptographed for transmission by any means except authorized courier service when provided. Courier service for clear text secret messages is normally not available at the signal center.

SECTION IV

SIGNAL CENTER

■ 815. The term "Signal Center" includes a message center section, a cryptographic section (if required), and one or more operating sections, each one operating a means of signal communication. The purpose of the message center is to speed the transmission of messages. The message center chief selects the means of transmission of messages. Except for secret messages the writer should provide the message center with two copies of each message *plus* one additional copy for each addressee, if any, over one.

■ 816. LOCATION.—Message centers are located at all command posts and at the rear echelon of the headquarters of larger units. *Advance message centers* may be established at any location where they are needed to speed the transmission of messages. When the commander or an echelon of a headquarters moves with a column on a march, a message center operating in a vehicle accompanies the command group.

■ 817. OPERATION.—*a.* The message center is not organized or equipped to perform the following duties:

(1) Stenographic or clerical work for the headquarters it serves.

(2) Prepare additional copies of outgoing or incoming messages for multiple transmission or distribution. When transmission of mimeographed or printed material to a number of addressees is desired, all copies required for each addressee are delivered to the message center, wrapped, packaged, or otherwise secured, and plainly marked with their destination. Each such item is handled as a single message and will be delivered by messenger.

b. The message center is responsible only for messages delivered to it and does not include those messages which are:

(1) Transmitted directly by the writer to the addressee by personal agency, by telephone or by teletypewriter provided for private use.

(2) Handled by the military or civil postal service.

(3) Local messages between staff sections or individuals at the same location.

(4) The receipt of clear text messages delivered by special messenger to the addressee at a headquarters below the division.

(5) *Secret Messages.*—In tactical operations when time permits *secret* messages will normally be carried by a staff officer or officer courier operating as a direct agent. They may be transmitted by electrical or other means available provided the message center possesses the requisite codes. All personnel handling secret messages are required by the War Department to read AR 380-5.

■ **818. TIME INVOLVED IN MESSAGE TRANSMISSION.—a. Message Center.—**

(1) *Recording.*—Maximum time permitted for all message center recording operations should not exceed 2 minutes unless cryptographing is required.

(2) *The cryptographing and decryptographing rate, varies from about one to eight words or groups per minute.*

b. Operator.—The following message rates are based upon calling, transmitting, and acknowledging receipt of a message of ten code or cipher groups, or ten words of clear text with address and signature.

	1	2
1	<i>Means of transmission</i>	<i>Messages per hour</i>
2	Telephone.....	10-15
3	Telegraph (TG-5, TG-5-A, or other single-line manual).....	25-30
4	Telegraph (duplex).....	50-60
5	Teletypewriter (single-line).....	60-100
6	Teletypewriter (duplex).....	120-190
7	Radiotelegraph.....	15-25
8	Radiotelephone.....	8-12
9	Lamp.....	10
10	Semaphore flags.....	12
11	Wig-wag flag.....	10
12	Panel (code groups per hour).....	20

c. Messenger.—

	1	2	3
1	<i>Kind of messenger</i>	<i>Rate of travel in miles per hour</i>	
		<i>Day</i>	<i>Night (blackout)</i>
2	Dismounted (runner).....	3-5	2-4
3	Mounted (horse).....	6-8	4-6
4	Bicycle.....	6-10	6-10
5	Motor and motorcycle.....	25-40	15-30
6	Airplane.....	80-200	80-100
7	Pigeon.....	30-45	30-60

SECTION V

RADIO COMMUNICATION

■ 819. GENERAL.—*a.* Radio, when properly used, furnishes a valuable means of signal communication. It is used for both tactical and administrative messages by all units of a modern army. It is an essential means for highly mobile elements such as aircraft and armored units, and is especially applicable to motor movements and fast moving situations.

b. Radiotelegraphy is less subject to static interference than radiotelephony, and has greater range with a given amount of power.

c. Radiotelephony is used when person-to-person contact is required and when secrecy is relatively less essential. By using prearranged voice codes in radiotelephony secrecy can be maintained.

d. Proper use of radio as a means of communication requires a high state of training. It is imperative that communication exercises be conducted for staff officers and signal elements prior to combat in order to insure efficient operation of radio communication.

e. The range and quality of radio communication are affected, to a varying degree, depending upon the frequency used, by the weather, by the nature of the intervening terrain or obstacles, by the time of day, by the season of the year, and by magnetic disturbances.

■ 820. CAPABILITIES.—*a.* Radio stations are readily portable, and may be quickly placed in operation.

b. Radio stations may be operated from moving vehicles.

c. Radio is the only means of long range communication with or between ships or airplanes.

d. The approximate transmission range of a radio station may be limited in order to decrease the possibility of enemy interception and interference with other friendly stations.

■ 821. PRECAUTIONS.—*a.* Radio intelligence is the enemy's best method of obtaining information of our plans, and operations by:

(1) Intercepting our messages.

(2) Locating our radio transmitters and thereby approximately locating command posts and other important installations, thus obtaining information as to the strength, constitution, and capabilities of our forces.

821. PRECAUTIONS:

b. Enemy intelligence activities cited above can be largely counteracted. These counter-measures often limit our use of radio communications. These measures include:

(1) Maintaining radio silence (operators continue to listen) at appropriate times.

(2) Maintaining a normal volume of traffic.

(3) Enforcing rigid radio discipline.

(4) Enciphering or encoding messages. However, code and cipher systems can be compromised by too frequent use and too large a volume of traffic.

(5) Using authenticator systems to identify stations and to establish authenticity of messages.

(6) Locating radio transmitters at a distance from command posts and other installations served, using remote control from the command posts.

(7) Safeguarding frequencies and call sign assignments, and changing them frequently.

(8) Providing alternate frequencies and shifting frequencies when a particular frequency is jammed.

(9) Using radiotelegraph in preference to radiotelephone whenever both are available.

(10) Establishing dummy stations.

(11) Transmitting false messages.

c. Radio equipment is complex and fragile. It requires constant maintenance and intelligent care.

d. Operating and maintenance personnel require extensive specialized individual training.

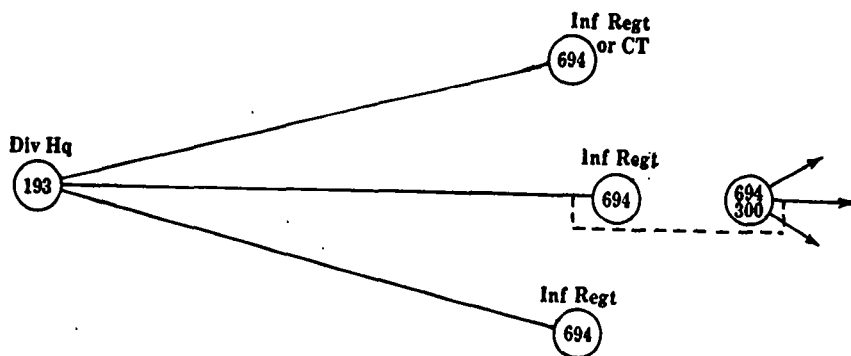
e. Necessary cryptographing and decryptographing of messages and use of authenticators delay transmission of messages and do not provide absolute security. Given sufficient time and volume of messages, any code or cipher system can be broken.

f. False messages transmitted by the enemy are designed to create confusion and cause action to his advantage.

g. Enemy action creating interference or "jamming" on our frequency channels denies us the use of radio communication.

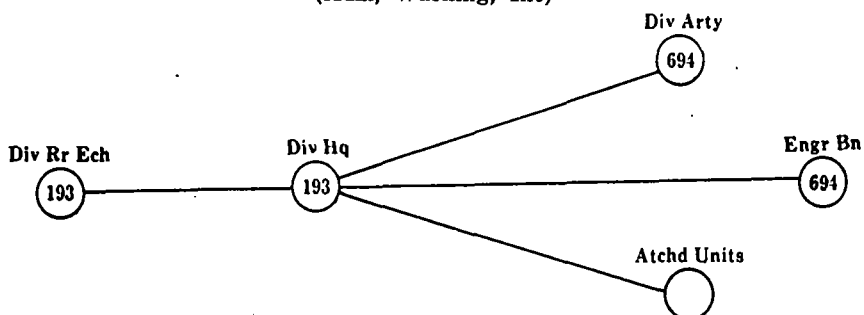
■ 822. TYPE RADIO NETS, INFANTRY DIVISION:

a. *Division Command Net No. 1:*

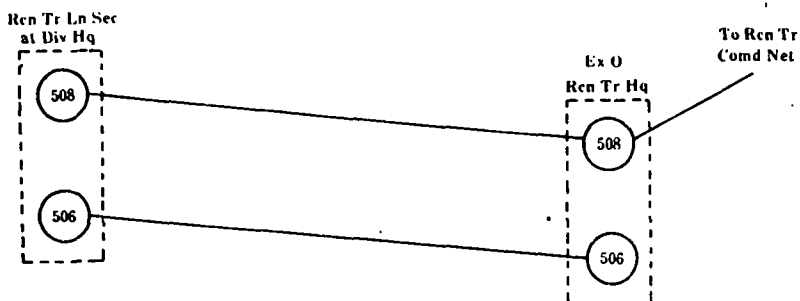


b. *Division Command Net No. 2:*

(Adm, Warning, Int)

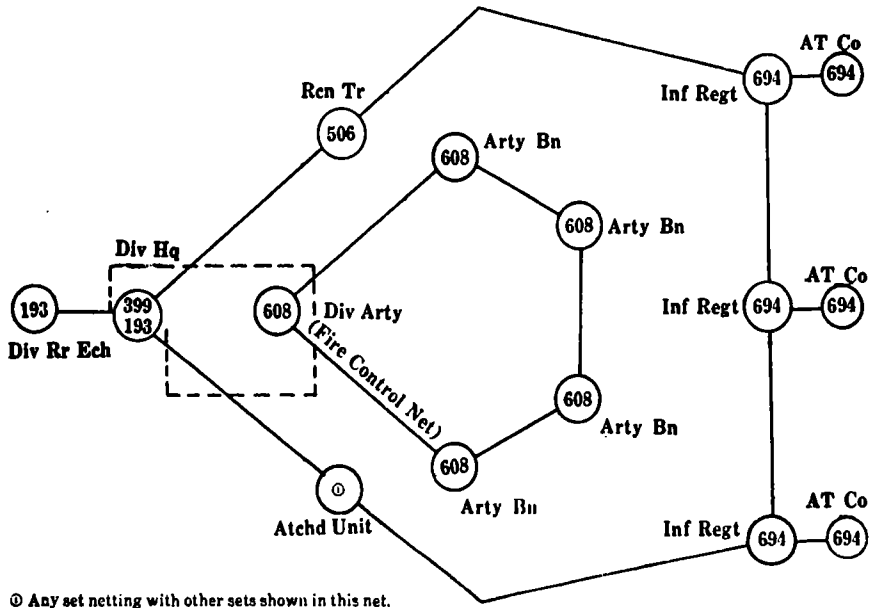


c. *Division Reconnaissance Net:*

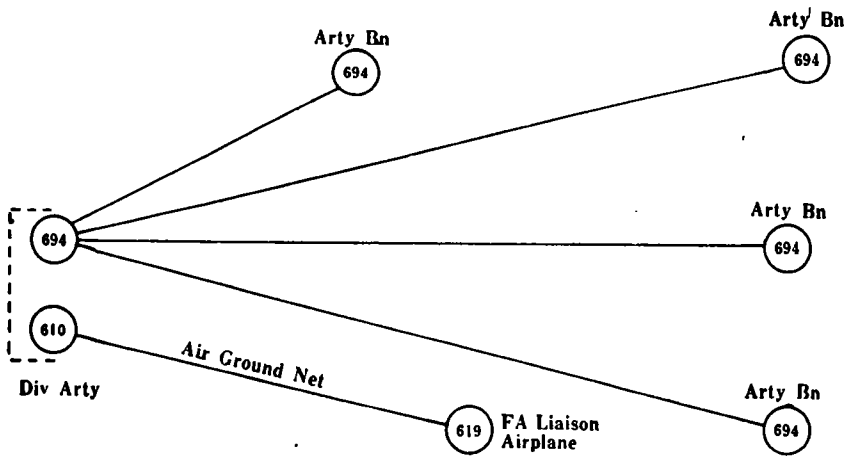


822. TYPE RADIO NETS, INFANTRY DIVISION:

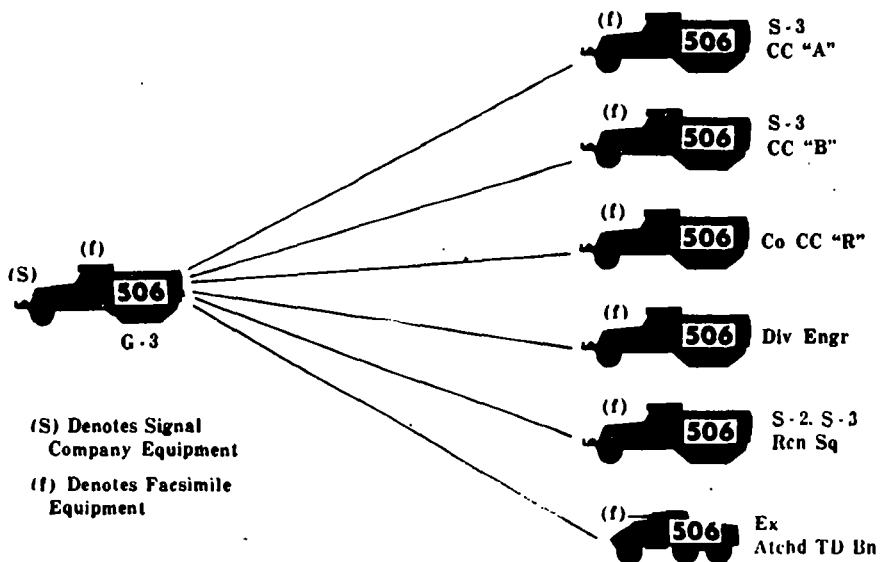
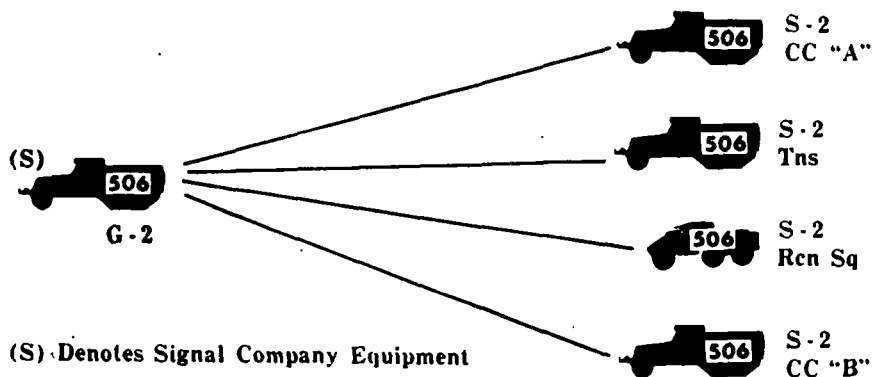
d. Division Warning Nets:



e. Division Artillery Command Net:

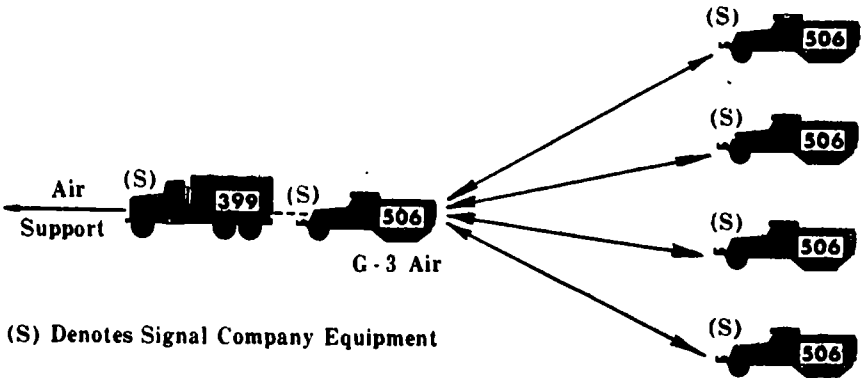


■ 823. TYPE RADIO NETS, ARMORED DIVISION:

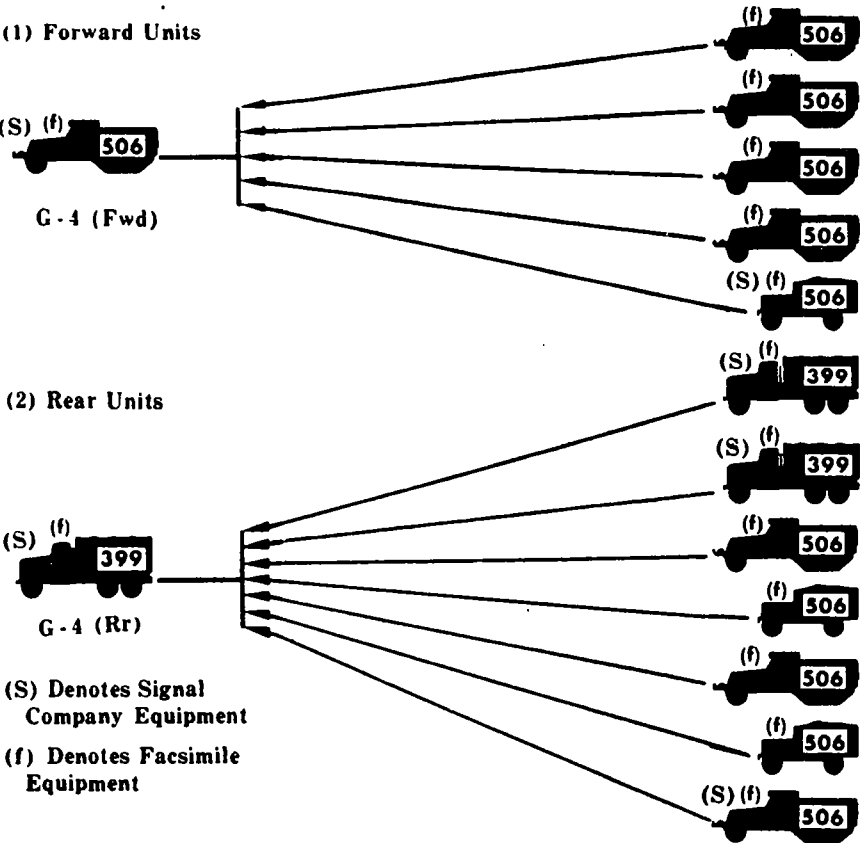
a. *Division Command Net:*b. *Division Reconnaissance Net:*

823. TYPE RADIO NETS, ARMORED DIVISION :

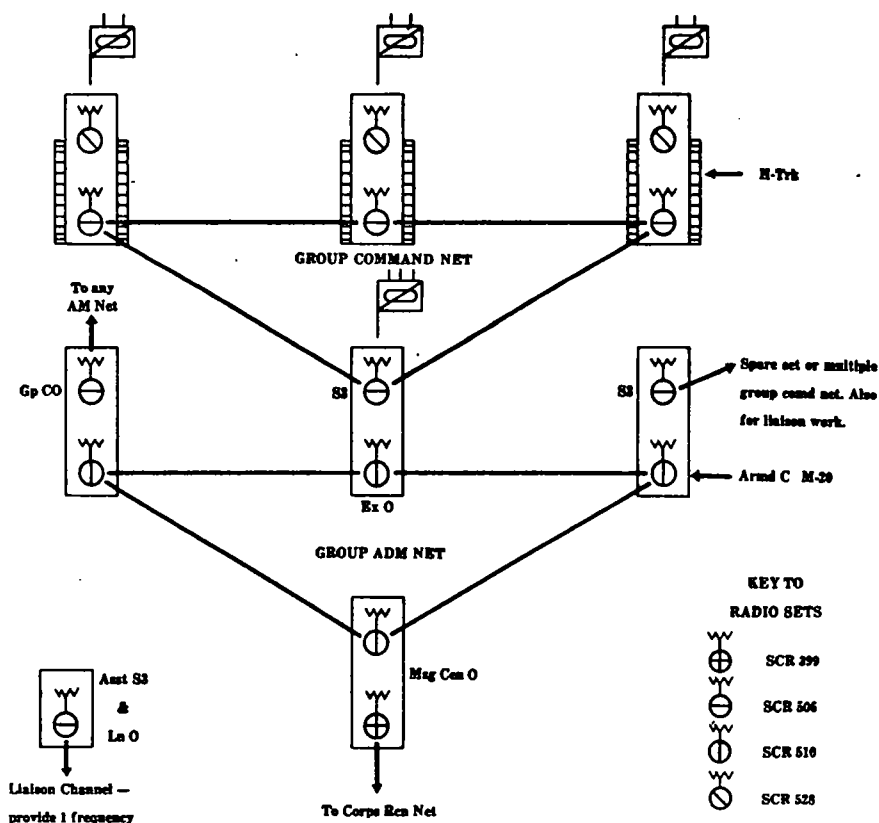
c. Division Air Request Net:



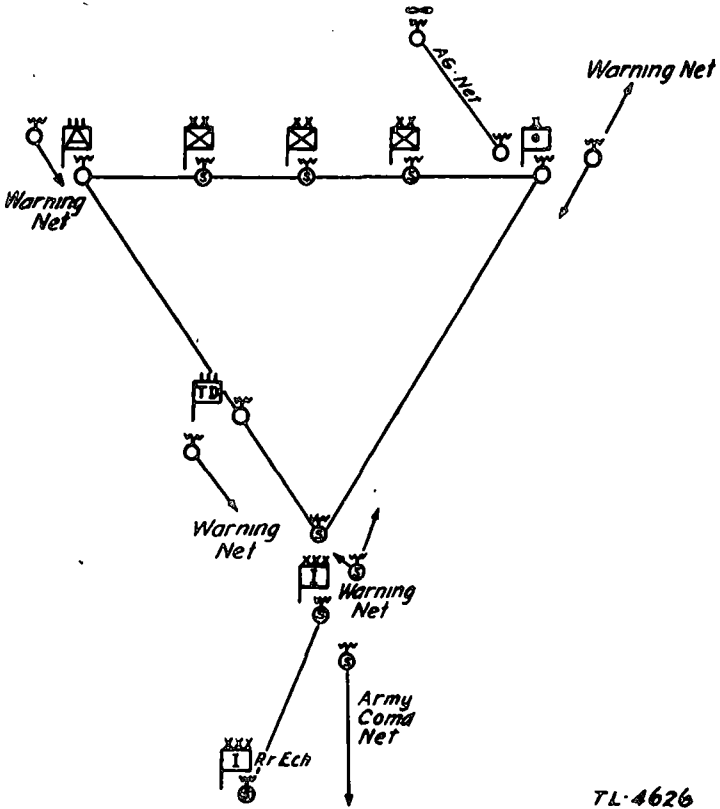
d. Division Administrative Nets:



■ 824. TYPE RADIO NETS, CAVALRY RECONNAISSANCE GROUP MECHANIZED:



■ 825. TYPE RADIO NETS, CORPS (less Cav Rcn Gp Mecz) :



■ 826. RADIO SETS. CHARACTERISTICS.—*a. Infantry Division.*—

1	2	3	4	5	6	7			
Set SCR	Type signal	Range (miles)	Power source	Weight (lbs)	Description and remarks	Relative frequency coverage (not to scale) frequency →			
2	193-()	CW Tone Voice	*60 *40 *20	Vehicle battery	200	Vehicular set. *Stationary; approximately half these values when moving.	————		
3	284	CW Voice	30 7	Vehicle battery or hand generator	269 110	Used in vehicle or on ground. Pack. Being replaced by SCR-694.	————		
4	300	Voice (Freq Mod)	5	Battery	32	Walkie Talkie. Carried on back.			————
5	399	CW Voice	250 100	Power unit PE-95		Installed and operated in 2½-ton truck which tows 1-ton cargo trailer mounting gasoline generator. Two receivers.	————		
6	506	CW Voice	70 25	Vehicle battery	210	Vehicular set.	————		
7	510	Voice (Freq Mod)	5	Dry Btry or Vibr Pack, Veh Btry	65	Vehicular set. 2 pre-selected channels available VHF.		————	
8	511	Voice	5	Dry batteries	20	Carried by man, horse, motorcycle, or bantam. One pre-set frequency available.	————		
9	536	Voice	1½	Dry batteries	6	Carried in the hand. Operates on a single pre-set frequency.	————		

826. RADIO SETS, CHARACTERISTICS:

a. Infantry Division (Continued) :

	1	2	3	4	5	6	7			
1	Set SCR	Type signal	Range (miles)	Power source	Weight (lbs)	Description and remarks	Relative frequency coverage (not to scale) frequency →			
10	593	Voice		Storage battery	30	Receiver only. Carried shoulder slung or mounted in vehicle.	————			
11	608	Voice (Freq Mod)	15	Vehicle battery	275	FA vehicular set, operated by persons not radio specialists. Two receivers. VHF. 10 preset frequencies.			————	
12	610	Voice (Freq Mod)	5	Vehicle battery or dry batteries	70	FA portable set, carried in vehicle or by one man. VHF. (Being replaced by SCR 619.)			————	
13	619	Voice (Freq Mod)	5	Vehicle battery or dry battery	Ap- prox 25	FA portable set, carried in vehicle or by one man. VHF. (Replaces SCR 610.)			————	
14	694	CW Tone Voice	30 20 15	Vehicle battery or hand generator	150 86	Vehicular. Pack.	————			

826. RADIO SETS, CHARACTERISTICS:

b. Armored Division.—

1	2	3	4	5	6	7	
	<i>Set SCR</i>	<i>Type signals</i>	<i>Range (miles)</i>	<i>Power source</i>	<i>Channels Preset</i>	<i>Weight (lbs)</i>	<i>Description and remarks</i>
2	300 (& AN/ VRC- 3	Voice (FM)	5	Battery	40	32	Vehicular mounted, Tk Co and Plat. For Ln with Inf.
3	399	CW Voice (AM)	250 100	Power unit PE-95	Tune	850	Installed and operated in 2½-ton truck which tows 1-ton cargo trailer mounting gasoline generator. Two receivers.
4	506	CW Voice (AM)	70 25	Vehicle battery	Tune	210	Armd Comd set, replaced in part SCR-193 and 245.
5	508	Voice (FM)	7	Vehicle battery	10	210	Armd Comd vehicular set, 10 pre-selected channels available, 2 receivers. VHF.
6	509	Voice (FM)	5	Dry Btry or Vibr Pack, Veh Btry	2	50	Armd Comd vehicular set, 2 pre-selected channels available. VHF.
7	510	Voice (FM)	5	Dry Btry or Vibr Pack, Veh Btry	2	70	Armd Comd vehicular set, 2 pre-selected channels available. VHF.
8	528	Voice (FM)	7	Vehicle battery	10	175	Armd Comd vehicular set. Same as SCR- 508 except only one receiver. VHF.
9	536	Voice (AM)	1½	Dry Btry	1	6	Armd Inf Co set. Carried by user. "Handie-talkie."

c. Air Forces Units.—

2	183 or 283	Tone Voice	45 30	Plane battery	Tune	45	Aircraft command set.
3	187 or 287	CW Tone Voice	750 500 250	Plane battery	Tune	250	Medium range aircraft liaison set.
4	188-A	CW Tone Voice	100 70 30	Gas Eng Gen Set	Tune	1,385	Carried in vehicle. Air-ground set for Air Corps.
5	197-()	CW Tone Voice	250 150 100	100 or 220 volt 60 cycles. Gen coupled to drive	Tune	Truck 9,980 Trailer 7,000	Air-ground set for higher headquarters. Vehicular set contained in truck. Accompanying trailer contains 3 receivers and wire communications equipment. Remote control through wire lines up to 7½ miles.
6	274-N	CW Tone Voice	150 75	Plane battery	Tune	76.5	Aircraft command set.

826. RADIO SETS, CHARACTERISTICS:

c. Air Forces Units (Continued):

1	1	2	3	4	5	6	7
	Set SCR	Type signals	Range (miles)	Power source	Channels Preset	Weight (lbs)	Description and remarks
7	399	CW Voice	250 100	Power unit PE-95	Tune	1,000	Installed and operated in 1½-ton truck which tows 1-ton trailer mounting gaso- line generators. Two receivers.
8	522 & 542	Voice	130 @ 10,000 ft	Plane battery	4	49	VHF Aircraft Command Set.
9	578	MCW	200	Hand generator	Tune	25	Sea rescue transmitter.
10	585	Voice	1	Dry batteries	Tune	12	For gliders. When removed it becomes SCR-536.

■ 827. RADIO TRANSMISSION RANGES.—*a. Very High Frequency Line of Sight Communication Range can be determined from the curves below:*

(1) Method of determining very high frequency transmission ranges:

(a) To determine graphically the limit of line of sight distance from a point elevated above the average surrounding terrain enter the graph on the following page at the elevation in feet and go to the line of sight curve. Thence perpendicularly to the appropriate distance in miles scale and read directly the distance to the horizon in miles. If the object which you are observing is also elevated above the average terrain, apply the same procedure for its elevation and add the distance thus obtained to the first distance.

EXAMPLE.—Two observers are elevated 150 and 250 feet respectively above the average terrain. To determine the maximum unobstructed distance at which they can see each other enter the graph at 150 feet on the vertical scale. Go to the right to the line of sight curve and drop perpendicularly to the distance scale in miles reading 14 as the distance to the horizon from the observer. Similarly enter at 250 feet and obtain 18 miles. These two figures added give maximum line of sight separation between the observers (14 miles + 18 miles = 32 miles).

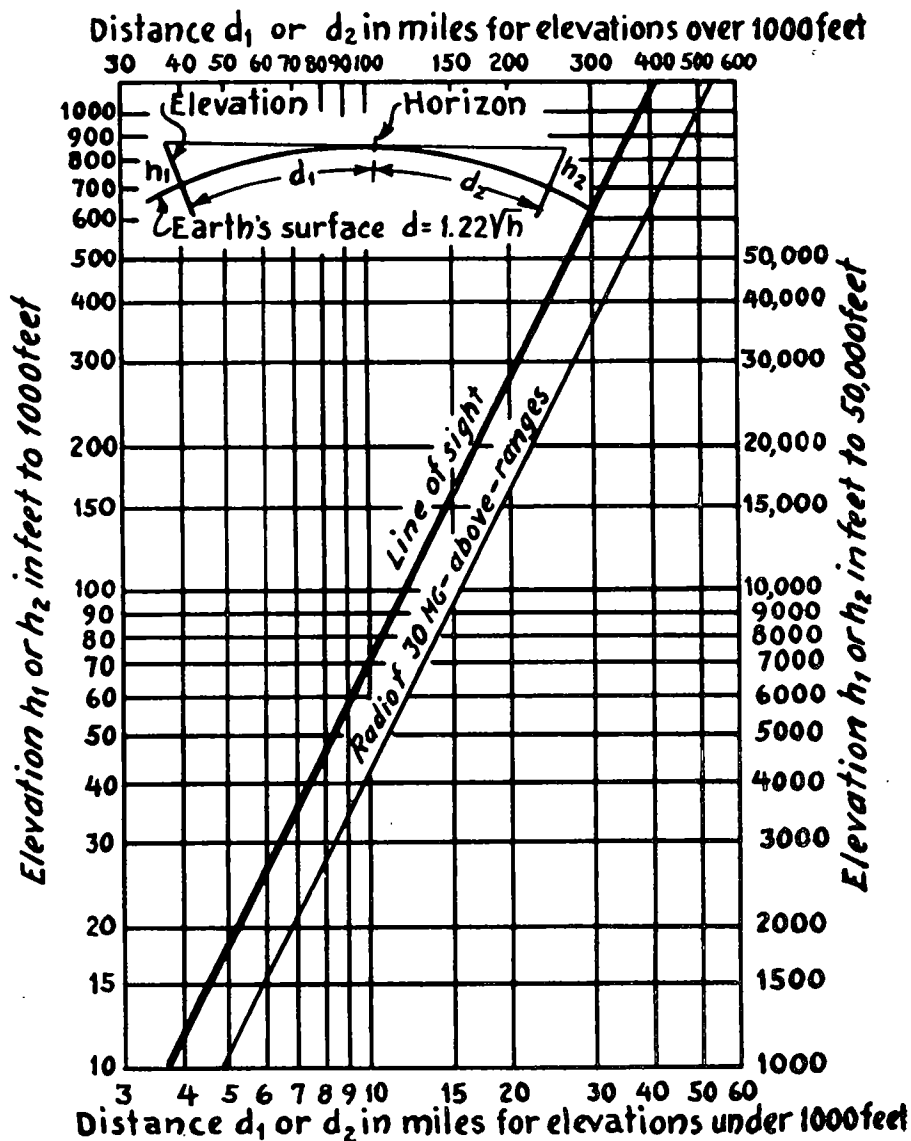
(b) To determine mathematically the limit of line of sight distance from the evaluations given in the above example take 1.22 on 150 miles + 1.22 on 250 miles = 14 miles + 18 miles = 32 miles.

(c) Very high frequency radio range is about 25% greater than line of sight and can be obtained graphically from the radio frequency curve in the graph.

827. RADIO TRANSMISSION RANGES:

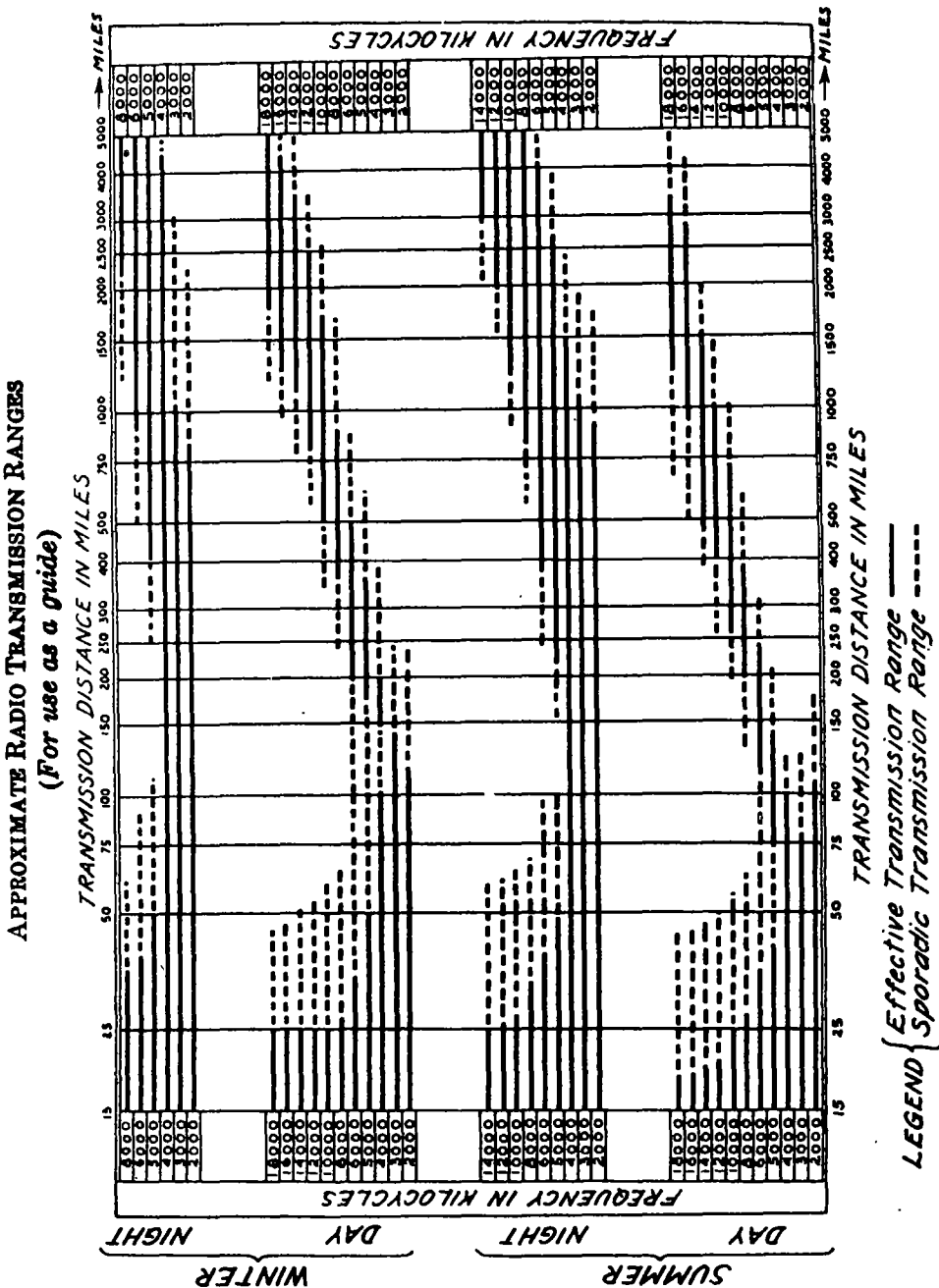
a. *Very High Frequency Line of Sight Communication Range can be determined from the curves below (Continued) :*

(2) Distance d_1 or d_2 in miles for elevations h_1 and h_2 over 1,000 feet.



827. RADIO TRANSMISSION RANGES:

b. *Expected Transmission Distances for Various Frequencies, Times of Day and Seasons of Year.* (See TM 11-462.)



SECTION VI

VISUAL COMMUNICATION

■ 828. **EMPLOYMENT.**—Visual communication is an auxiliary means of signal communication when other means are available, but in the absence or failure of other means it may become the only one. Visual communication is seldom employed in higher units, but is frequently employed within small units, particularly for transmitting prearranged signals, short code groups, and brief messages in the following cases:

- a.* Fire control.
- b.* Front to rear of small combat units.
- c.* Laterally between combat units when both stations are defiladed from hostile observation.
- d.* Air-ground communication, particularly ground to air.
- e.* Ground to vehicles in motion.
- f.* Between vehicles.
- g.* Amphibious operations.

■ 829. **LAMPS.**—Signal lamps are authorized for specified units. Air Force signal lamps are used for air-ground, air-ship, and air-air identifications. Signal lamps may be improvised by using standard flashlights.

■ 830. **FLAGS.**—Signal flags are authorized for specified ground force units. Signal flags are useful for artillery fire control when more suitable means are not available.

■ 831. **PYROTECHNICS.**—Pyrotechnics are an emergency means of sending short urgent messages. Due to the limited number of distinguishable signals available, meanings assigned to signals are usually limited to the following uses:

- a.* From front-line units to cause artillery fire to commence, cease, or lift.
- b.* To indicate arrival of units at predetermined locations or to coordinate operations when no other means are available.
- c.* For recognition between ground units and aircraft.
- d.* From aircraft to call for display of marking or identification panels or to request ground troops to indicate where a message may be dropped.

Meanings are assigned pyrotechnic signals by the superior headquarters in signal operation instructions and should be changed frequently for secrecy and to prevent the enemy from using similar pyrotechnics to confuse our own troops. Prearranging, when possible, the time or place from which our signals will be fired may help to avoid confusion from enemy fired signals.

■ 832. SMOKE.—Smoke grenades, smoke pots, smoke shells, and other smoke devices offer some possibilities for visual communication. Smoke signals may be employed effectively for target designation. Colored smokes may be used for recognition purposes in indicating the location of friendly troops.

■ 833. PANELS.—*a.* Fluorescent red, fluorescent yellow, or white panels about the same size as signalling panels are used in accordance with "Signal Operation Instructions."

- (1) To mark leading elements. Displayed by leading platoon only.
 - (a) Must not be left displayed after troops move forward.
 - (b) Displayed when called for by prearranged signal or during a time bracket for prearranged missions with air.
- (2) To identify vehicles, columns, or positions, panels are displayed:
 - (a) When menaced or fired upon by friendly aircraft.
 - (b) When called for by prearranged signal.
 - (c) At other times as prescribed.

b. Signaling panels are issued for communicating with aircraft and for the location and identification from the air of unit command posts. They may be used by ground units to indicate to aircraft the direction to targets or to convey short messages in a prearranged code.

An identification panel display is assigned to each headquarters in signal operation instructions. On request by friendly aircraft a unit identifies itself by displaying the prescribed identification display. See FM 24-5 and CCBP-8.

c. Display grounds.—Panel display grounds are located near the radio station since panels are normally operated in conjunction with the unit radio station. Although communication from aircraft is normally by radio, signal lamps or dropped messages may be used. Care must be exercised to see that panels are displayed only to friendly aircraft who have identified themselves as such by use of a prearranged signal or code group. Upon the approach of hostile aircraft the friendly aircraft should first be warned and then panels should be taken up and concealed. Ground troops may attract the attention of friendly aircraft to their panel display by means of signal lamps, mirrors, or other visual means.

■ 834. AIRCRAFT.—In an emergency, when a ground station is not equipped for radio or when the radio transmitter of an aircraft is silenced or out of operation, an aircraft may communicate to a limited degree with a ground station by means of a few simple standard maneuvers of the aircraft while in flight. Meanings are assigned to such maneuvers in signal operation instructions after consultation with the supporting air unit commander. Prearranged adjustment of the fire of field artillery batteries using only panels and aircraft signals may be both rapid and practicable.

SECTION VII

WIRE COMMUNICATION

■ 835. TELEPHONE.—*a. General.*—The distance over which satisfactory telephone communication is possible is determined by the electrical characteristics of the telephone circuit. A given type of dry wire circuit has a definite talking range. Training in preparation for field operations or combat should always provide for communication exercises using *field* telephones in order to familiarize all personnel including commanding officers and staff officers with their proper use. The following rules should be carefully adhered to in the use of field telephones:

(1) Make all conversations brief by mentally preparing the subject matter before the call is placed.

(2) The telephone should not be used for long reports, orders, or messages when other means are available.

(3) Conversations must be discreet since secrecy is never assured.

(4) After placing a call do not leave the telephone until a report is received and upon completion of a call always "ring-off."

(5) When the called party cannot answer the telephone promptly, leave your number and request that he call you back. Do not hold the line while waiting for him as that will deprive others of its use.

(6) No unnecessary conversations should be held with the switchboard operator and he should be spoken to in a civil manner.

(7) Use telephone directory and proper directory names and numbers in placing calls.

(8) Operators should not be directed how to route a call nor should the calling party attempt to route his own call by merely asking for connection to a certain central. Operators are trained to route calls with a minimum of delay when they are given the complete designation of the called party.

b. Capabilities.—(1) It is more reliable and consistent, and less subject to mechanical and electrical failure than radio.

(2) Does not require a high degree of technical skill to install and operate at smaller headquarters.

(3) Is less easily intercepted than is radio or visual communication.

(4) Requires considerable time, labor, and material and equipment to install, operate and maintain.

(5) Is limited in range and to points of geographical contact.

(6) Subject to failure due to vulnerability of extended lines to bombing, artillery fire, and enemy patrols.

(7) There is no satisfactory means of assigning precedence to telephone traffic. Telephone operators may be instructed to make circuits available if calls are announced as "Urgent" or "Operational Priority" by

835. TELEPHONE (Continued) :

competent authority. Relatively unimportant and verbose conversation delays the transmission of vitally important messages.

(8) Subject to mechanical and electrical failure, in proportion to the elaborateness of the equipment involved.

(9) Subject to tapping.

(10) Often, no record of a message is made.

■ **836. TELETYPEWRITER.**—*a. General.*—The teletypewriter is a telegraph instrument designed for interchanging printed messages between two or more stations. It is employed between headquarters in the same manner as the manual telegraph. Data relative to the employment of the teletypewriter will be found in FM 11-5.

b. Capabilities.—(1) It is rapid, reliable, and accurate in transmission and provides a printed record of each message.

(2) More secret than either the radio or the telephone.

(3) Has greater transmission range than the telephone over the same type line.

(4) When sufficient machines are available, may be placed in offices of staff officers of larger units for direct communication.

(5) Operates as a secondary channel on telephone lines already established.

(6) Any typist can be quickly trained as a teletype operator.

(7) Equipment is heavy, bulky, and difficult to transport and install.

(8) A dependable source of power is required, but is frequently difficult to obtain in the field.

(9) Requires frequent maintenance and adjustments by technically skilled personnel and a large stock of critical replacement parts.

(10) Message transmission is limited by the length and range of wire circuits, and the points of geographical contact.

(11) Subject to tapping.

■ **837. MANUAL TELEGRAPH.**—*a. General.*—Telegraph equipment permits the utilization of existing wire lines to form additional channels for message transmission.

b. Capabilities.—(1) Has greater transmission range without use of repeaters, than telephone or teletypewriter.

(2) Operates over lower grade circuits than telephone or teletype.

(3) Equipment is lighter, more simple, and more reliable than any other electrical means of communication.

(4) Operates on a secondary channel over telephone or teletype circuits.

837. MANUAL TELEGRAPH (Continued) :

(5) Requires little electrical power in operation.

(6) Requires skilled operators. Radiotelegraph operators can be used with some extra training.

(7) It is slower than teletypewriter, but faster in general than radio.

■ **838. FACSIMILE EQUIPMENT.**—*a. General.*—Wire facsimile equipment is designed for transmission of photographs, maps, charts, overlays and printed or written messages between two or more stations by wire. With some simple additional equipment it can be used for radio facsimile transmission, employing standard signal corps radio sets. It is employed between headquarters of divisions or higher units.

■ **839. WIRE DATA.**—*a. Rates of Wire Line Construction.*—Foot troops lay about $1\frac{1}{2}$ miles of field wire per hour, using a three-man team per circuit. Darkness or traffic congestion may reduce this to about one mile per hour.

b. Field wire laid from trucks advances about three to five miles per hour. Two circuits may be laid simultaneously from the same trucks at the same rate. The team is usually six men.

A construction platoon can construct a pole line with five open wire circuits at the rate of about a quarter mile per hour, provided the poles and equipment are already delivered along the route. Light pole line materials weigh $2\frac{1}{2}$ tons per mile. Standard pole line materials weigh 6 tons per mile. A platoon can place an additional arm with five pair at about one-half mile per hour. A platoon can install a pair on two brackets on an existing pole line at the rate of about $2\frac{1}{2}$ miles per hour. Minimum clearance at main road crossing is 18 feet. About 25 poles per mile are required. These figures vary with transportation available, size of working parties, rocky soil, weather, traffic congestion and related factors.

839. WIRE DATA:

c. Replacement Requirements of Field Wire per Day of Combat, Infantry Division.

Type of combat	Miles of wire ¹				
	Inf Regt	Div Arty Hq Btry	FA Bn	Div Sig Co	Total for Div
INITIAL ALLOWANCE (Approximate, see T/E).....	90	30	75	120	720
REPLACEMENT REQUIREMENTS (Approximate per day)					
1. ATTACK:					
a. In a meeting engagement.....	16	8	17	30	154
b. Of a position.....	24	12	18	35	191
c. Of a zone.....	16	6	9	35	125
2. DEFENSE:					
a. In a meeting engagement.....	10	8	17	24	130
b. Of a position.....	12	8	11	24	112
c. Of a zone.....	16	9	17	30	155
3. DELAYING ACTION.....	20	12	22	40	200
4. RETIREMENT: Day.....	16	9	17	30	155
Night.....	32	12	22	40	236

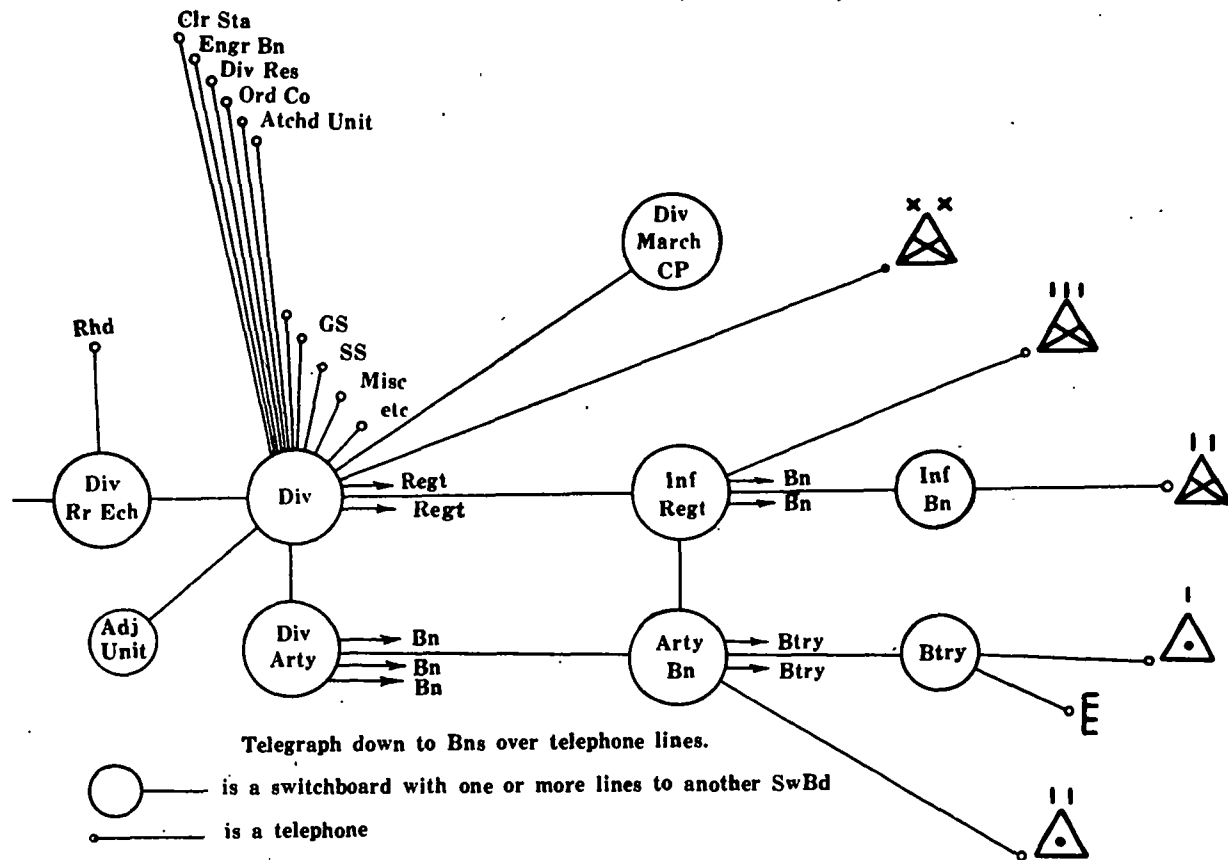
¹ These figures vary widely with terrain, speed of action, and dispersion of units.

d. Talking Range on Wire Circuits.—Using standard equipment without repeaters, the following talking ranges can be expected over wire circuits in ordinary weather:

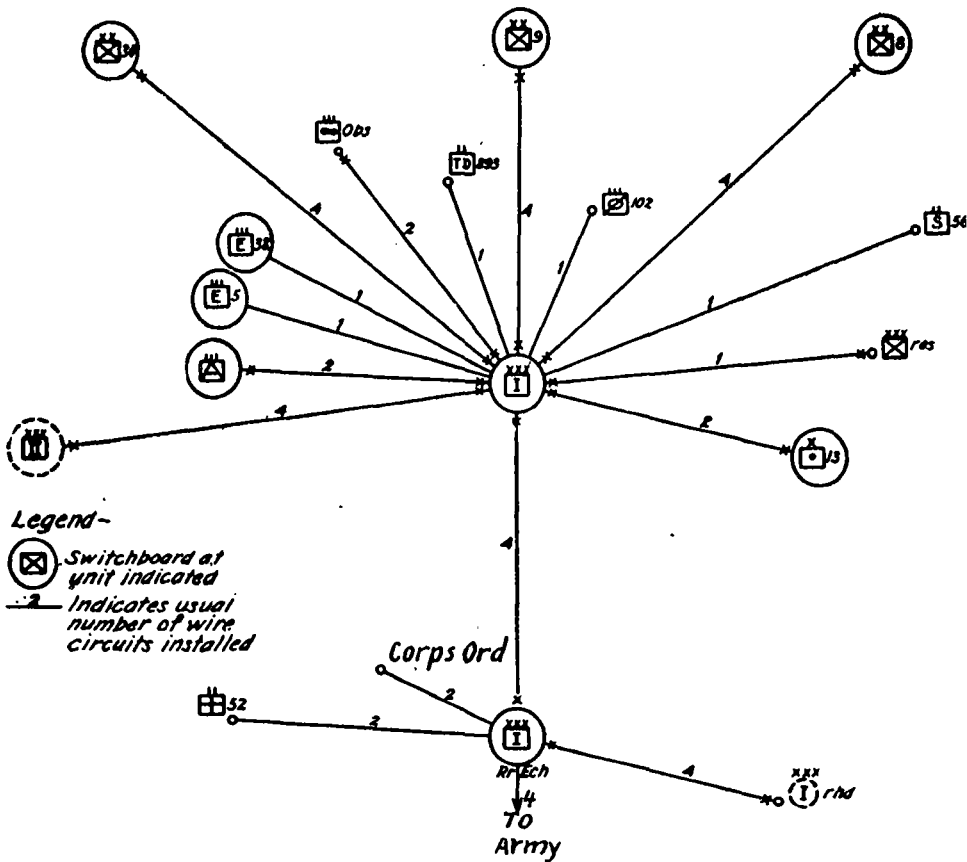
Type wire circuit	Approximate talking range miles ¹	Remarks
		FIELD WIRE
W-110	10	Field wire, twisted pair
W-110-B	11	Field wire, twisted pair
W-110-B (loaded)	19	Field wire, twisted pair, loaded
W-130	7	Field wire, twisted pair, rubber-covered
W-143	25	Field wire, parallel lay-insulated wire pair
W-150	7	Field wire, twisted pair, weatherproof braid
		CABLE
CC-345	19	Field cable, 5 pairs, rubber covered.
CC-358 (w/carrier and repeater equipment)	150-aerial 400-Buried	Field cable, spiral 4, 2 pairs, rubber covered.
		OPEN WIRE
W-74	520	Open wire, bare copper, 8-inch spacing. (128 mil)
W-75	118	Open wire, bare galvanized iron, 8-inch spacing. (148 mil)
W-76	79	Open wire, bare galvanized iron, 8-inch spacing. (83 mil)

¹ Each additional telephone or switchboard in parallel with line decreases range about 5%.

DIVISION WIRE NET (SIMPLIFIED)

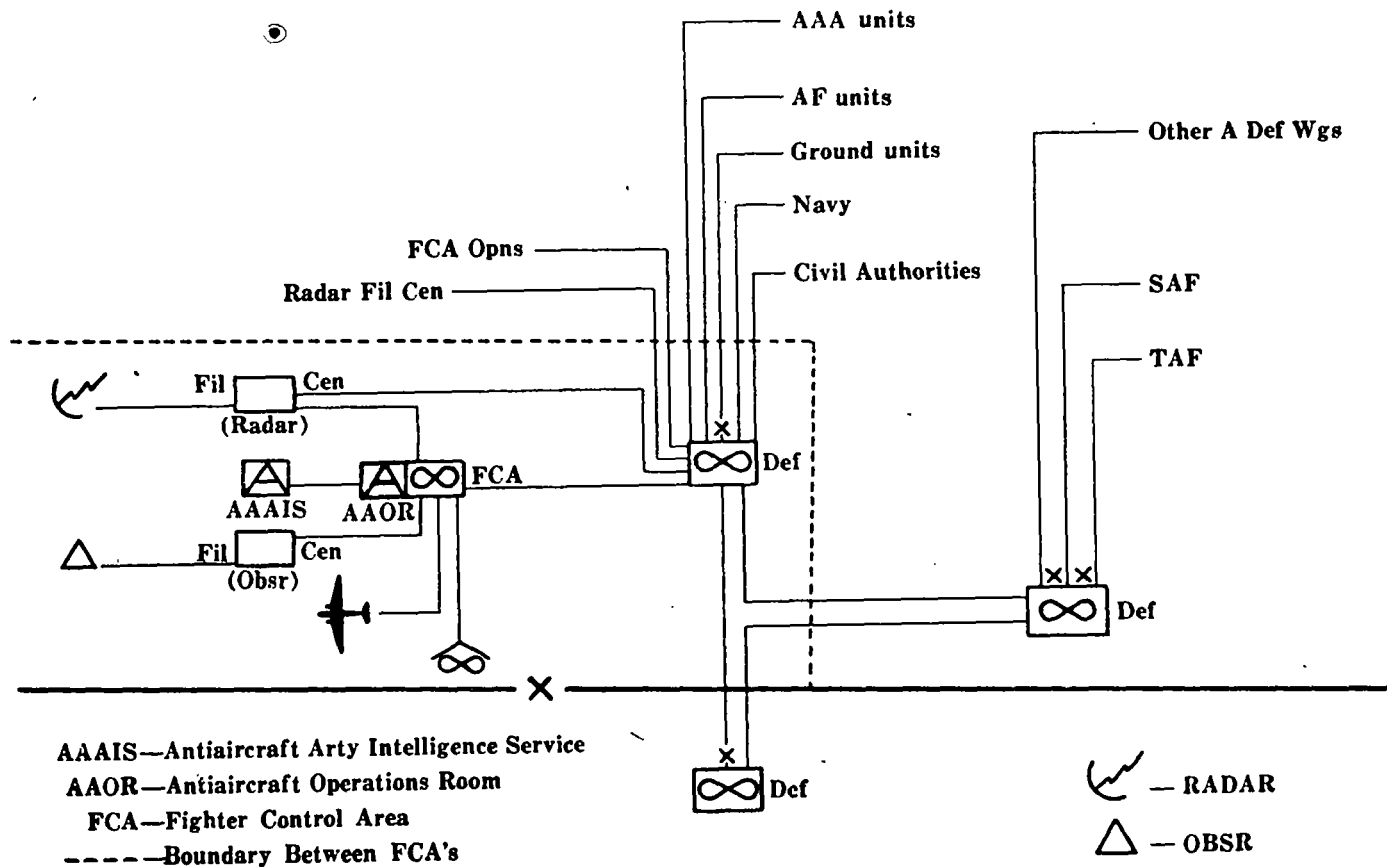


■ 841. TYPE WIRE NETS, CORPS.



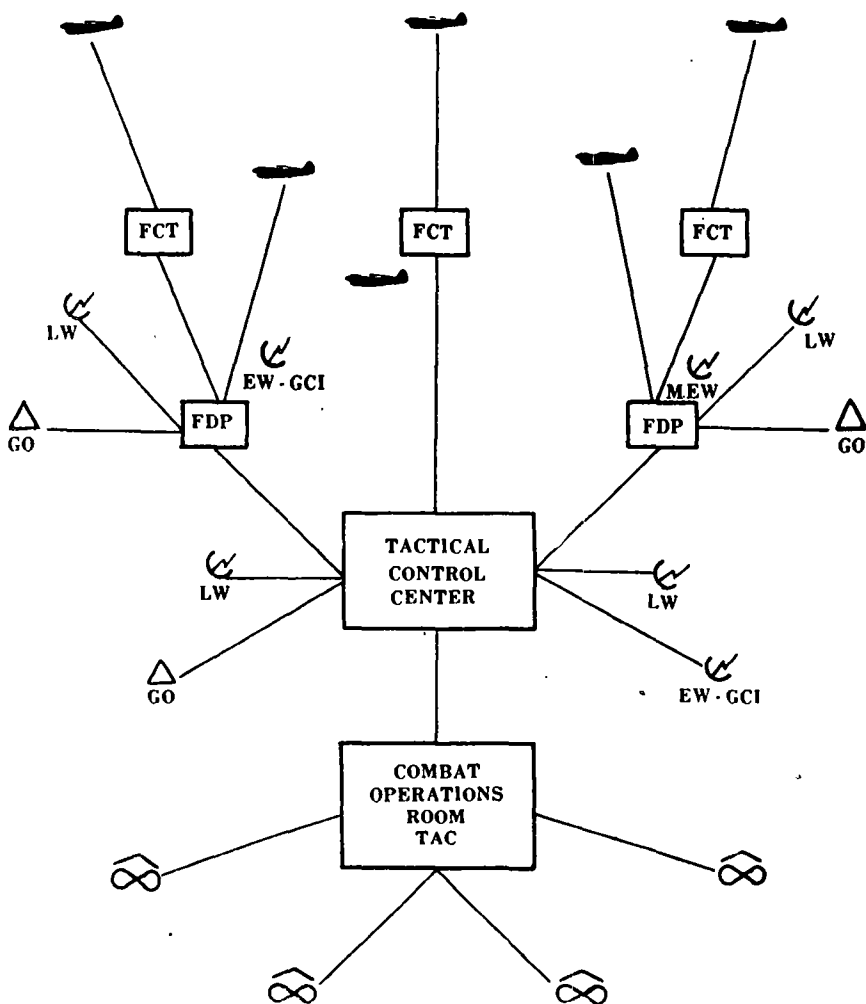
842. TYPE AIR COMMUNICATION NETS.

a. Aircraft Warning Service (Air Defense Organization)



842. TYPE AIR COMMUNICATION NETS:

b. Net for Control of Offensive Missions—Tactical Air Command (Schematic only):

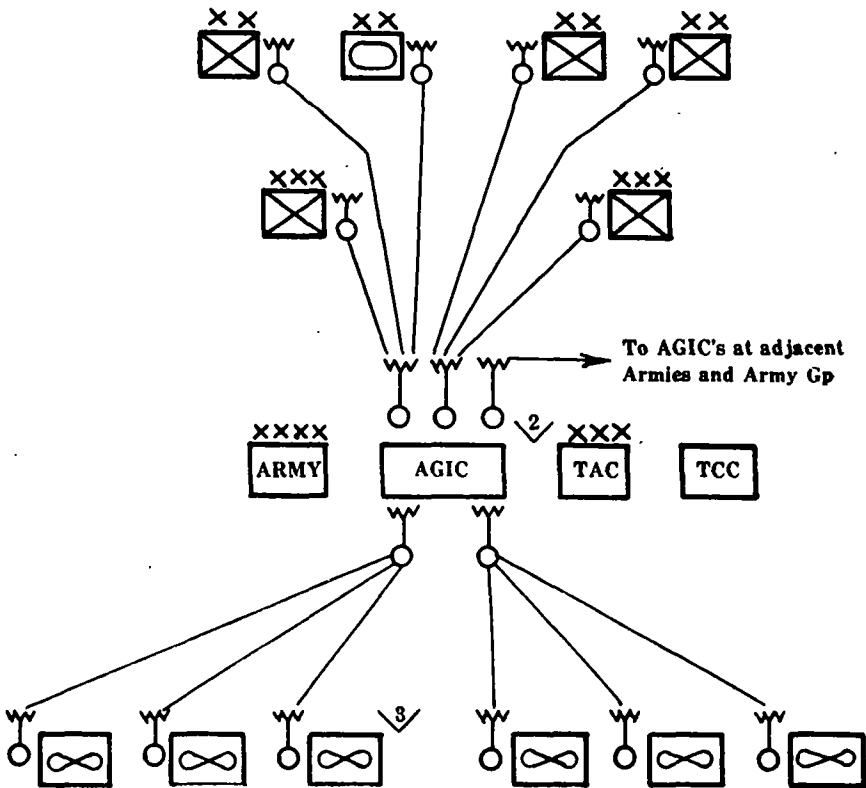


LEGEND

FCT—Forward Control Team
 FDP—Forward Director Post
 GO—Ground Observer Team
 LW—Light Warning Radar

MEW—Microwave Early Warning Radar
 EW - GCI—Early Warning—Ground Controlled Interception Radar

842. TYPE AIR COMMUNICATION NETS:

*c. Army Air-Ground Information Net:*¹

LEGEND: AGIC—Air Ground Information Center
 TAC—Tactical Air Command
 TCC—Tactical Control Center

¹ Command channels not shown.

² Radio circuits from AGIC to ground units serve AGLO's, those to air units, GLO's.

³ Size of air units to which GLO's assigned varies, usually Sq of Rcn Acft, Gps of other types.



SECTION VIII

TABLES OF SIGNAL EQUIPMENT

■ 843. TABLES OF SIGNAL EQUIPMENT.—*General.*—This section lists in ready reference form the principal items of signal equipment issued to troops. It illustrates a suitable *method* of assembling signal data applicable to any unit. Similar tables should be prepared and kept up to date by Signal or Communication Officers of each unit. In airborne and amphibious operations, volume displacement information will probably be required. (See TM 11-462.)

■ 844. PRINCIPAL ITEMS OF SIGNAL CORPS EQUIPMENT.—*a. Infantry Division.*

1	2	3	4	5	6	7	8	9	10	11	12	13	14
<i>Item</i>	<i>Type No.</i>	<i>Weight (lbs.)</i>	<i>Sig Co (DH Q)</i>	<i>Rcn Tr</i>	<i>Inf Regt Hq Co</i>	<i>Inf Bn Hq Co</i>	<i>Inf AT Co</i>	<i>Inf Cn Co</i>	<i>Inf Rifle Co</i>	<i>Inf Hq Wpns Co</i>	<i>Hq Btry Div Arty</i>	<i>Hq Btry FA Bn</i>	<i>Engr Bn</i>
RADIO EQUIPMENT:													
2 Detector.....	SCR-625	20.0		3		2	3					1	15
3 Frequency meter set.....	SCR-211-()	40.0	1	1	1						1		1
4 Radio set.....	SCR-193	195.0	9								1	1	
5 Radio set.....	SCR-284	269.0											
6 Radio set.....	SCR-399	6,595.0 ¹	1										
7 Radio set.....	SCR-300	32.0	6		12	6	5	8					
8 Radio set.....	SCR-506-()	210.0	1	13									
9 Radio set.....	SCR-508	207.0	1	13									
10 Radio set.....	SCR-510-()	70.0	1	10									
11 Radio set.....	SCR-528	175.0		1									
12 Radio set.....	SCR-536	6.0	10						6	6			
13 Radio set.....	SCR-543	181.0	1										
14 Radio set.....	SCR-593	30.0	2										
15 Radio set.....	SCR-608	275.0	2								2	2	
16 Radio set.....	SCR-619	70.0	10								2	11	
17 Radio set.....	SCR-694	27.0	1		6	1	1				2	2	7
TELEPHONE—TELEGRAPH, FACSIMILE AND SWITCHBOARDS:													
18 Coil, repeating.....	C-161	3.5	12		4	1					2		
19 Facsimile.....	RC-120	322.0	1			1							
20 Emergency switchboard.....	SB-18-GT					2							
21 Switchboard (8-line).....	BD-71	48.0	1		2			1			1	1	2
22 Switchboard (12-line).....	BD-72	68.0	5		4	1					2	2	
23 Telegraph set.....	TG-5-A	5.5	6		12	8					5	1	
24 Telephone.....	EE-8-A	9.8	72					6			21	24	5
25 Telephone.....	TP-3	10.5	11										8
26 Telephone.....	TP-9	21.5	10										
27 Telephone central office set.....	TC-4	590.0	3								1		
28 Teletypewriter set.....	EE-97	455.0	4										

¹ Includes Shelter HO - 17, Trailer K - 52.

844. PRINCIPAL ITEMS OF SIGNAL CORPS EQUIPMENT:

a. Infantry Division (Continued):

1	2	3	4	5	6	7	8	9	10	11	12	13	14
Item	Type No.	Weight (lbs.)	Sig Co (DH Q)	Rcn Tr	Inf Regt Hq Co	Inf Bn Hq Co	Inf AT Co	Inf Cn Co	Inf Rifle Co	Inf Hq Wpns Co	Hq Btry Div Arty	Hq Btry FA Bn	Engr Bn
29	WIRE-LAYING EQUIPMENT:												
30	Axle (wire-laying, hand).....	RL-27	5.0	14	6	3		3				3	
31	Reel unit (truck).....	RL-26-()	275.0	6							1	1	
32	Reel unit (truck or hand).....	RL-31	31.0	8	4	1		1			3	4	1
33	Reel unit.....	RL-39	2.6								2	5	8
	Reel equipment	CE-11	17.0		3	8		12	12	2	20		
	WIRE, REPEATERS AND LOAD- ING COILS:												
34	Coil, loading.....	C-114	1.5	40									
35	Repeater.....	EE-89	14.0	10									
36	Wire, mile (on DR-4, ½-mile reel)	W-110-B	70.0	10	20	4						3	2
37	Wire, mile (on DR-5, 1-mile reel)...	W-110-B	132.0	110							30	9	
38	Wire, mile (assault) (DR-4).....	W-130A	32.0		5	4		8				15	
39	Wire (on DR-8, mile).....	W-130A	32.0		1½	2	2	3	3	½	5	3	4
	MECHANICAL CIPHER DEVICES:												
40	Converter.....	M-209	6.0	15	13	8	3	1			4	4	15
	SIGNAL FLAGS AND AIR-GROUND PANELS:												
41	Flag kit.....	M-113	3.0									6	
42	Flag set.....	M-238		43									
43	Panel set (signaling).....	AP-30-C		3	1	1	1				1	1	
44	Panel set (signaling).....	AP-30-D		3	1	1	1				1	1	
45	Panel set (signaling).....	AP-50-A	5.0	40	24	4	8	16	13	3	4	3	27

844. PRINCIPAL ITEMS OF SIGNAL CORPS EQUIPMENT:

b. Radio Equipment of an Armored Division:

(1) Distribution of vehicles and radio sets:

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	AIRPLANES AND VEHICLES WITH TYPE SETS INSTALLED OR CARRIED	Div Hq & Hq Co	Hq & Hq Co, C C (s)	Hq & Hq Bn, Div Arty	Div Sig Co	Tn Hq & Hq Co & Rr Ech	Cas Rm Sq	Hq & Hq & Ss Tr, Rm Sq	4 Rm Trs (ex)	Assault Gun Tr	Tk Co, L	3 Tk Bns (ex)	Hq & Hq Co, Tk Bn	3 Tk Co, M (ex)	Tk Co, L	Ss Co
2	Airplane, Liaison SCR-509			2												
3	Car, Armored, Light, M8															
4	SCR-508	1														
5	Carriage, Mtr, 75-mm How, M8	1					52	4	12							
6	Car, Half-track, M3A2,						8			8						
7	Ambulance SCR-506 & 528															
8	Car, Half-track, M3A2															
9	SCR-508				2		5			5	1	2	2			
10	SCR-510				1		1				6	2	2		1	
11	SCR-528	1			1		6	2	1		1	1	1		1	1
12	SCR-506 & 508	2	2	1	1	1	1	1				2				
13	SCR-506 & 510	3	4	1	10	1	1	1				2				
14	SCR-536 & 510															
15	SCR-506 & 528				1		1	1								
16	AN/VRC-3 & SCR-528															
17	AN/VRC-3 SCR-506 & SCR-508															
18	SCR-300 & SCR-536 & SCR-508															
19	SCR-300 & SCR-536 & SCR-528															
20	Carriage, Mortar 81-mm															
21	SCR-536 & 510															
22	Half-track, M21															
23	SCR-509 & 510															
24	Tank, Light						3				3	3	8			
25	SCR-508						13				13	10			10	
26	SCR-528	2	2									4			4	
27	AN/VRC-3 & SCR-508											3				
28	AN/VRC-3 & SCR-528															
29	SCR-506 & 508		1				1				1					
30	SCR-506 & 528	1														
31	Tank, Medium											1	1			
32	SCR-508										31	1	10		4	
33	SCR-528										12		9		3	
34	AN/VRC-3 & SCR-508															
35	AN/VRC-3 & SCR-528															
36	Tank, Medium, (105-mm, How)															
37	SCR-628										6	3	1		1	
38	Truck, 1/4-ton, 4x4	3			2	7	44	3	10		1	11	6	1	1	1
39	SCR-510															
40	SCR-536 & 510															
41	SCR-300															
42	Truck, 1/4-ton, 4x4 Weapons															
43	Carrier															
44	SCR-510															
45	SCR-528															
46	SCR-506 & 510											1				1
47	Truck, 2 1/2-ton, 6x6, Cargo				1											
48	SCR-510															
49	SCR-399 & 510				6											
50	Vehicle, Tk Recovery, M32															
51	SCR-528						3	1		1	1	6		1	1	2
52	Radio Equipped Vehicles	14	9	5	22	9	139	13	23	14	20	108	20	21	20	5
53	Totals per Armored Division															

(2) Distribution of radio sets only:

42	AN/VRC-3 & SCR-300											28		7	7	
43	SCR-399				6											
44	SCR-506	7	7	2	11	2	55	7	12		1	3	2			1
45	SCR-508	4	8	1		1	62	5	12	5	4	21	5	4	4	
46	SCR-509			2								8				
47	SCR-510	6	4	2	20	8	54	4	10	8	2	22	11	2	2	8
48	SCR-528	4	2		2		23	4	1	1	14	68	4	15	14	5
49	SCR-536															
50	Total SCR Radio Sets	21	16	7	39	11	195	20	35	14	21	145	25	28	27	9

844. PRINCIPAL ITEMS OF SIGNAL CORPS EQUIPMENT:

b. Radio Equipment of an Armored Division (Continued):

	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
	3 Inf Bns (ea)	Hq & Hq Co, Arm'd Inf Bn	3 Rifle Cos (ea)	3 Co	3 FA Bns (ea)	Hq & Hq Btry, 105-mm FA Bn	3 Btrys, 105-mm FA Bn (ea)	3 Btry	1 Arm'd Engr Bn	Hq & Hq Co, Arm'd Engr Bn	3 Engr Co, Arm'd Engr Bn (ea)	1 Med Bn	Hq & Hq Co, Med Bn	3 Med Cos (ea)	Ord Maint Bn (ea)	Hq & Hq Co, Ord Maint Bn	3 Maint Cos	Radio-Equipped Vehicles in an Arm'd Div	Total SCR Radio Sets in an Arm'd Div
2					2	2												3	8
3																		1	1
4																		53	106
5																		3	3
6												4	1	1				4	8
7	2	2																17	17
8	1	1																24	24
9	1	1		1	12	3	3											50	50
10	1	1			4	1	1											30	60
11									4	1	1							28	56
12	9		3		4	4			2	2								27	54
13															4	1	1	20	40
14	1	1																3	6
15	1	1																3	9
16	3		1															9	27
17	1	1																9	9
18	3	3																9	18
19																		9	18
20																		3	3
21																		49	49
22																		12	24
23																		9	18
24																		3	6
25																		1	2
26					3	3												12	12
27																		93	93
28																		36	72
29																		27	54
30	3	3																27	27
31	9	5	1	1	6	2	1	1	19	7	4							160	160
32	6		2															13	36
33	1	1																3	3
34																			
35					1	1			1	1								10	10
36	1			1	2			2				6	2	2	2	2		16	32
37																			
38																		1	1
39	1			1	2			2										30	30
40	44	19	7	4	86	16	5	5	26	11	5	12	3	3	16	4	4	825	1166
41																		825	1166

* Radio set SCR-510 and 2 SCR-528 carried as spare sets.

* The following radio sets are issued to the Division Signal Company as utility sets and are not included in totals.

SCR-510-----10

SCR-508-----12

SCR-506-----4

42	7	4	1																105
43																			6
44	3	2		1	10	5	1	2	6	3	1	6	3	1	6	3	1		158
45	7	4	1		7	4	1												179
46					2	2													17
47	29	9	6	2	8	2	1	3	23	3	5	2	2		12	3	3		312
48	7	5	6	2	19	3	3	2	3	3		10	1	3	4	1	1		332
49	22	4	6																66
50	75	28	14	5	46	21	6	7	32	14	6	18	6	4	22	7	5		1175

NOTES:



Chapter 9

CAMPS AND BIVOUAC AREAS

	Paragraph
Cantonments -----	901
Billeting -----	902
Semi-permanent Camps -----	903
Shelter Tent Camp -----	904
Bivouac Areas -----	905
References -----	906



CAMPS AND BIVOUAC AREAS

■ 901. CANTONMENTS.—*a.* The percentage of the total force in a theater of operations for whom barracks must be provided will vary widely with such factors as the theater mission, the tactical situation, the availability of billets and with climatic conditions. Temporary shelter, hutments and improvised cover is used extensively in most theaters rather than semi-permanent construction.

b. Space requirements for sleeping quarters are as follows:

Zone of the Interior.

Normal: 60 sq. ft. floor space and 720 cu. ft. air space per person.

Minimum: 40 sq. ft. floor space and 400 cu. ft. air space per person.

Theater of Operations (for seasoned troops).¹

Normal: 40 sq. ft. floor space and 400 cu. ft. air space per person.

Emergency: 20 sq. ft. floor space and 200 cu. ft. air space per person.

c. In cantonment, the building area for a 1000-man unit is 8.3 acres. However, large forces require a greater proportional area because of the desirability of dispersion, as a security measure, and to provide training, parking, and storage facilities.

Approximate area for infantry division is 160 acres.

Approximate area for armored division is 200 acres.

(Areas for drill, supply facilities, hospital and paddocks not included.)

■ 902. BILLETING.¹—In hostile or liberated territory billeting is resorted to when desirable. The capacity of a locality for billeting is approximately as follows:

Rich farming country —10 per inhabitant

Cities — 5 per inhabitant

Average American city —20 per vacant dwelling

Vacant buildings and dwellings
in average city —20% of population

(Inhabitants may be caused to
move to vacancies in order to
concentrate military activities.)

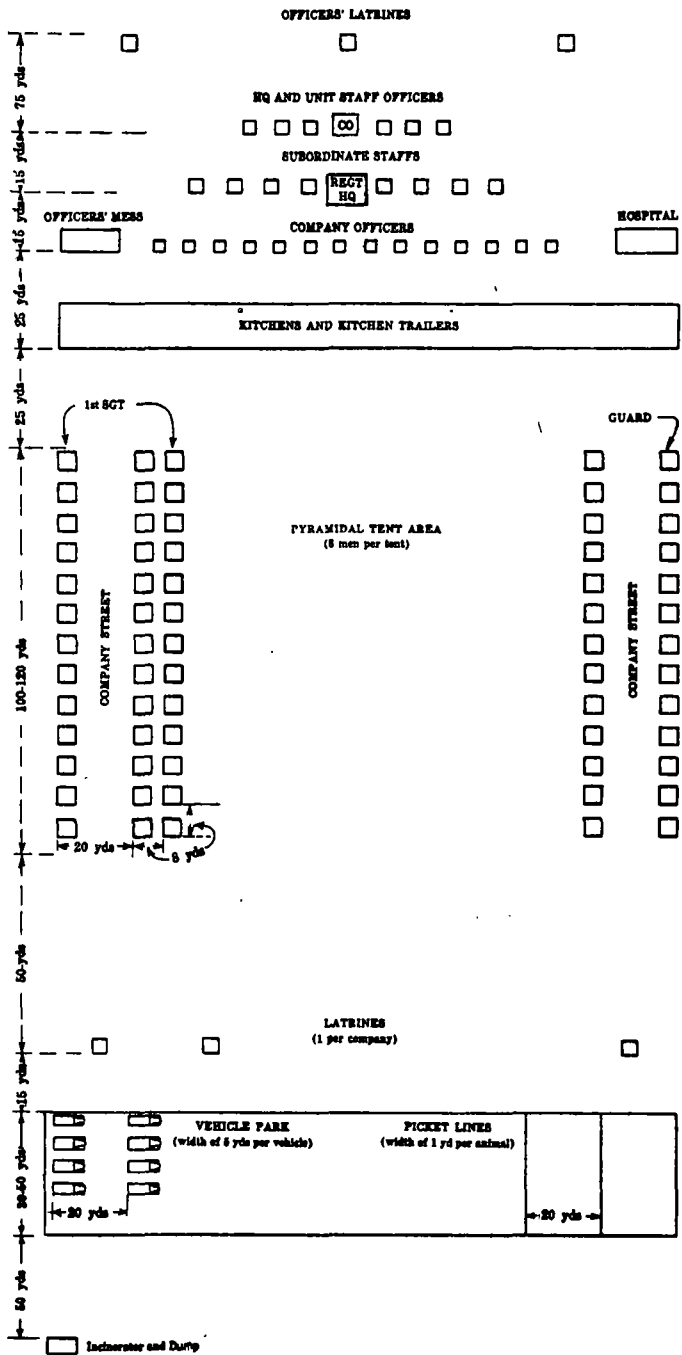
With inhabitants furnishing
subsistence —200% of population for one week.

■ 903. SEMI-PERMANENT CAMPS.—*a.* Tactical and terrain conditions will largely determine the actual dimensions of sites for semipermanent camps. Whenever possible, areas should be selected for semipermanent camps which will permit such camps to be so arranged as to provide for the comfort and convenience of the command.

¹ These figures may be used for staff planning in estimating civilian evacuee requirements in a theater of operations.

903. SEMI-PERMANENT CAMPS (Continued):

DIAGRAMMATIC LAYOUT OF A TENT CAMP



903. SEMI-PERMANENT CAMPS (Continued) :

b. There are many possible arrangements of facilities in a semipermanent camp. Data on them are given in a number of arm and service field manuals. A typical arrangement of such a tent camp which has been found satisfactory is shown in the diagram on the opposite page.

It is desirable to assign 6 men per large pyramidal tent with a maximum of 8 men. The area of open ground for an infantry regimental combat team would be about 50 acres. The initial estimate of the total area for any unit may be figured on the basis of 50 sq. yds. per man, and 100 sq. yds. per vehicle (10 acres per 1000 men or animals, 5 acres per 100 vehicles). This includes room for roads and assembly areas.

c. In a camp for units of the combined arms it will usually be desirable or necessary to have regimental or separate unit camps dispersed to a greater or less degree, with a minimum area for a division of about 480 acres. In the presence of the possibility of air attack, such a camp should not be established, but shelter should be dispersed, by battalion or company units, camouflaged, and advantage taken of existing cover and shelter.

■ **904. SHELTER TENT CAMP.**—The camp may be arranged as shown in the diagram, or shelter tents may be pitched in lines parallel to the vehicles of each company or similar unit (motorized units). Parking of vehicles abreast facilitates the use of individual vehicles; parking in close column facilitates the entry into camp and resumption of the march. Because a shelter tent camp generally is occupied only a short time, intervals may be reduced from those used in a semipermanent camp.

■ **905. BIVOUAC AREAS.**—As dictated by the tactical situation, units will bivouac in a dispersed formation without formal alignment of their elements. The degree of dispersion will be governed by the hostile mechanized threat, the air situation, and control of the command. Full use will be made of concealment and cover, and vehicles will be camouflaged and parked to facilitate their movement.

The bivouac area of a regimental combat team will vary from 50 acres to a square mile, as indicated by the situation and in proportion to the amount of concealment and cover available.

The approximate area required by a unit may be estimated as indicated in par. 903 b where personnel is the consideration, or on the following basis where the number of vehicles with the unit should govern: (the larger area as determined by the two methods will be used)—Take the square root of the number of vehicles with the unit, multiply by the desired dispersion in yards. This will give the square (area) in yards required to accommodate the unit. For example: Assume that a Regtl CT has 350 vehicles; square

905. BIVOUAC AREAS (Continued):

root of 350 equals 19 (approx); assume a dispersion of 100 yards between vehicles; 19 times 100 equals 1900 yards, which is the length of a side of the

square required, or approximately $\frac{1900}{70} \times \frac{1900}{70} = 736$ acres; personnel will

be distributed throughout the area.

NOTE.—The number of acres in a rectangular tract is approximately equal to the product of one-seventieth of the length in yards by one seventieth of the breadth in yards. One acre equals 4840 square yards (about 70 yards square). 1 square mile equals 640 acres.

■ 906.—REFERENCES.—FM 100-5, Halts and Security during halts, for tactical considerations in the selection of camp and bivouac areas.

FM 100-5, for detailed information regarding security measures.

FM 100-10, for administrative considerations.

FM 5-6 for shelter and camps; FM 5-10, for construction of cantonments.

FM 21-10, for sanitation.

TM 5-280, 5-281, for construction in the Theater of Operations.

Chapter 10

TIME, TIDE AND LIGHT

	Paragraph
Methods of Designating Time and Date	1001
Expression of Natural Phenomena	1002
Time Zone Chart and Conversion Table	1003
Time Zone Chart of the World	1004
Diagram of Tides, Sunlight and Moonlight	1005
Weather	1006

TIME, TIDE AND LIGHT

■ 1001. METHODS OF DESIGNATING TIME AND DATE:

a. Time.—Time will be expressed in a group of four digits ranging from 0000 to 2400. The first two digits on the left will be the hours after midnight, and the remaining two digits will indicate the minutes past the hour. Where the hour can be expressed by a single digit, it will be preceded by zero (0), for example, 0625 for 6:25 AM.

b. Date:

(1) In *all* communications, including the text of plans, and in all publications, the date will be expressed by spelling out or abbreviating the name of the month. The day, month, and year will always be expressed in that order. The day will always be expressed by numerals; the month will be either spelled out or abbreviated. Abbreviations, if used, will consist of the first three letters in the spelling of the word. The year will be expressed by four digits or by the last two digits, for example:

14 January 1946; 14 Jan 1946; 14 Jan 46.

(2) When future plans are involved and it is desired to keep the date of the operation secret, dates may be expressed by a letter such as D plus or minus a numeral. When D-day has actually passed, dates may be expressed as indicated in paragraph (1).

c. Greenwich Civil Time.—(1) Greenwich Civil Time will be used in both the heading and text of all communications of the following categories:

Messages and orders from the War Department.

Messages and reports to the War Department.

Orders, reports, and other communications between headquarters not having a common local time.

Communications with the Navy.

Communications with armed forces of associated nations.

(2) All time-groups expressing Greenwich Civil Time, including those in the headings of messages, will be designated by the letter suffix Z immediately following the last digit of the group. For example, 190225Z indicates 2:25 AM on the nineteenth day of the current month, Greenwich Civil Time.

■ 1002. EXPRESSION OF NATURAL PHENOMENA.—*a.* Staff officers will avoid the use of such indefinite terms as First light, Last light, Daybreak, Daylight, Darkness, Dusk and Dawn. Terms of a definite nature such as Sunrise, Sunset, beginning and ending of evening and morning, and Nautical and Civil Twilights are permissible. However, expressions of these periods or times to lower units must be in clock time.

b. For the purposes of military planning and to facilitate staff work in expressing natural phenomena in time, Theater Commanders should prepare and publish for the theater as a whole or for major geographic portions thereof, daily time, sunrise, sunset, twilight, moon and tide

1002. EXPRESSION OF NATURAL PHENOMENA (Continued) :

tables and should specify the hours the local time is different from Greenwich Civil Time.

■ 1003. TIME ZONE CHART AND CONVERSION TABLE.—*a. Time Zone Chart.*—(Paragraph 1004). The numbers in the time zones indicate the number of hours or fraction thereof that the Local Standard Time differs from Greenwich Civil Time. The time zones extend East and West from Greenwich to the 180 meridian. If the zone in question lies east of the prime meridian and one desires to transpose Greenwich Civil Time to Local Standard Time, then the number is added. Transposing Local Standard Time to Greenwich Civil Time, the number is subtracted. The signs are reversed if the zone lies west of the prime meridian.

b. Use of suffixes.

The suffix letter used after a 4-digit time group indicates the number of hours by which the time being expressed differs from Greenwich Civil Time at the same instant. *It does not designate location on the earth's surface.* The suffix used with War Time differs from that used with Local Standard Time for the same locality.

Example: St. Louis, Mo. is located in the fifth time zone west of Greenwich. If that city keeps Local Standard Time (zone description + 5), the time group suffix will be R. If that city keeps War Time, the suffix will be Q.

c. Explanation of Conversion Table:

(1) To convert local time in one time zone to local time in any other zone, use the area in the table designated "same day" and locate the hour of the given local time on the line for that zone, then, following up or down the column, read on the line of the other zone the hour of local time in that zone.

Example: Give local time 0445 in Zone -3 (C), determine the local time in Zone + 5 (R). Enter the table on line "-3 (C)" and locate the hour "04," then follow down to line "+ 5 (R)" and read "20 (previous day)." Add the 45 minutes and the desired local time is 2045 (R) the previous day.

(2) To convert "Z" time to local time or vice versa, follow the same procedure as above.

(3) To convert local time in a zone expressed in fractional hours (-6:30), use the hour figure only to enter the table and, if the starting zone is *positive*, add the extra minutes to the result. If starting zone is *negative*, subtract the extra minutes. Likewise, if the other zone is in fractional hours, read the quantity for the hour only and add or subtract the extra minutes as indicated by the value for the next zone.

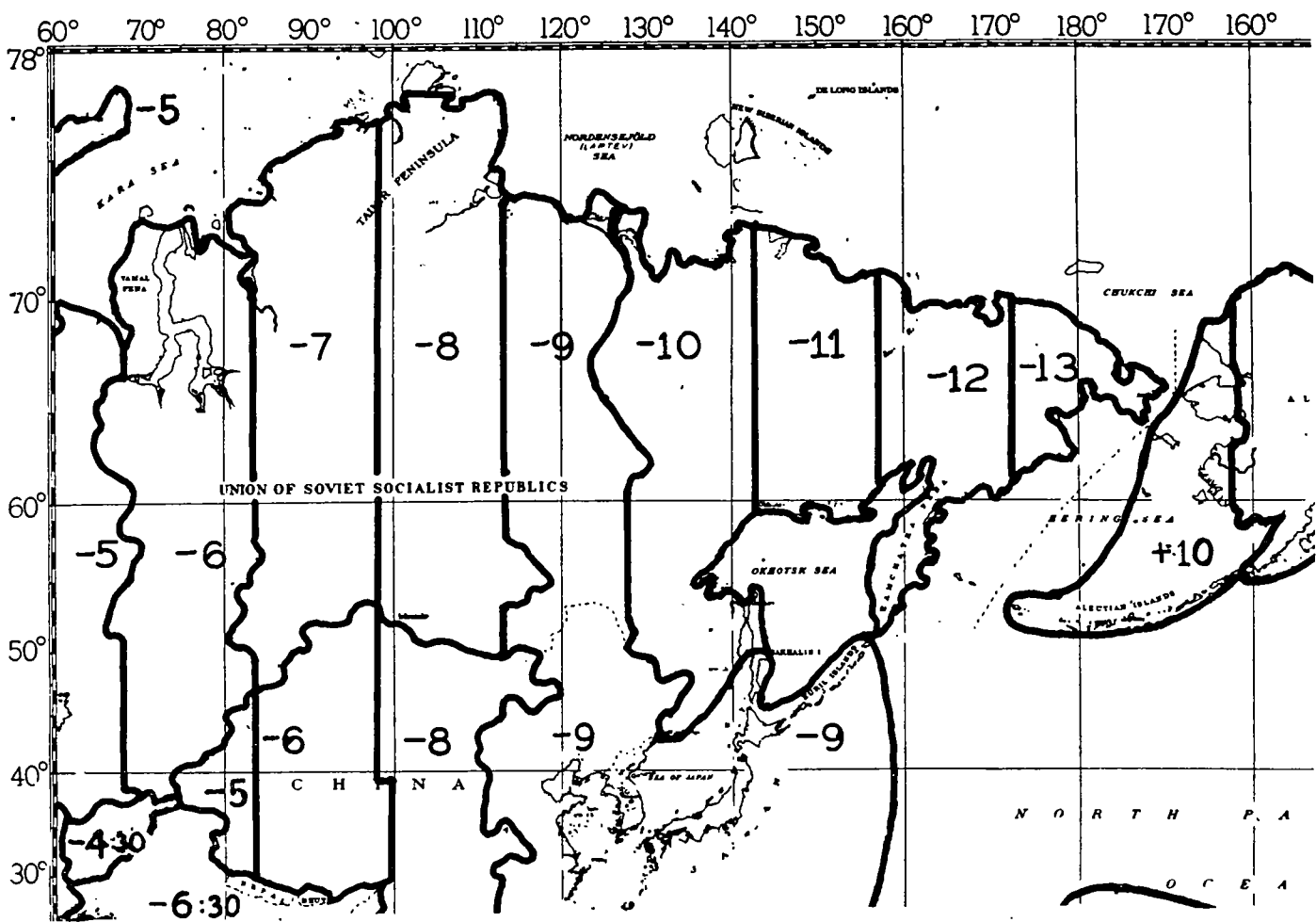
Example: Given local time 1825 in Zone -6:30, convert to local time in Zone +3:40. Enter the table on line -6 (F) and locate the hour "18," then follow down to line +3 (P) and read "09 (same day)." Add the 25 minutes and correct for the fractional zones by subtracting the 30 minutes and the 40 minutes. The local time then is 0815 the same day.

1003. TIME ZONE CHART AND CONVERSION TABLE (Continued):

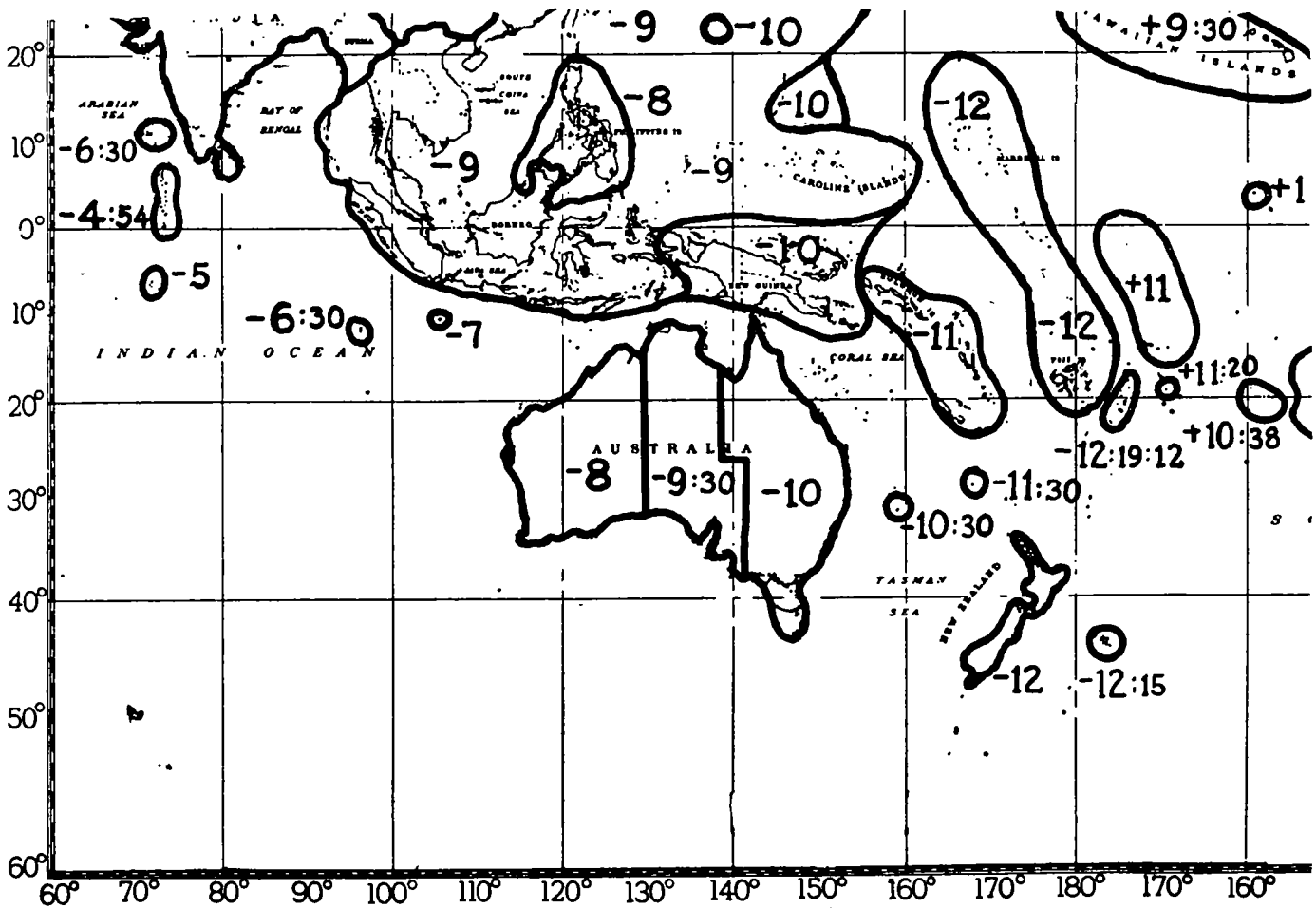
d. Table for Conversion of Time Throughout the World.

TIME ZONE	HOURS OF DAY IN LOCAL TIME																																																
	PREVIOUS DAY												SAME DAY												NEXT DAY																								
0 (Z)	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	
-1 (A)	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	
-2 (B)	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13	
-3 (C)	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	
-4 (D)	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	
-5 (E)	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	
-6 (F)	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	
-7 (G)	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	
-8 (H)	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	
-9 (I)	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	
-10 (K)	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22
-11 (L)	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	
-12 (M)	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
+1 (N)	11	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	
+2 (O)	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	
+3 (P)	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09
+4 (Q)	06	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	
+5 (R)	07	06	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	
+6 (S)	06	07	06	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	
+7 (T)	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	
+8 (U)	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	
+9 (V)	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	
+10 (W)	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00	01	
+11 (X)	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00	
+12 (Y)	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	00	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	
	PREVIOUS DAY												SAME DAY																																				

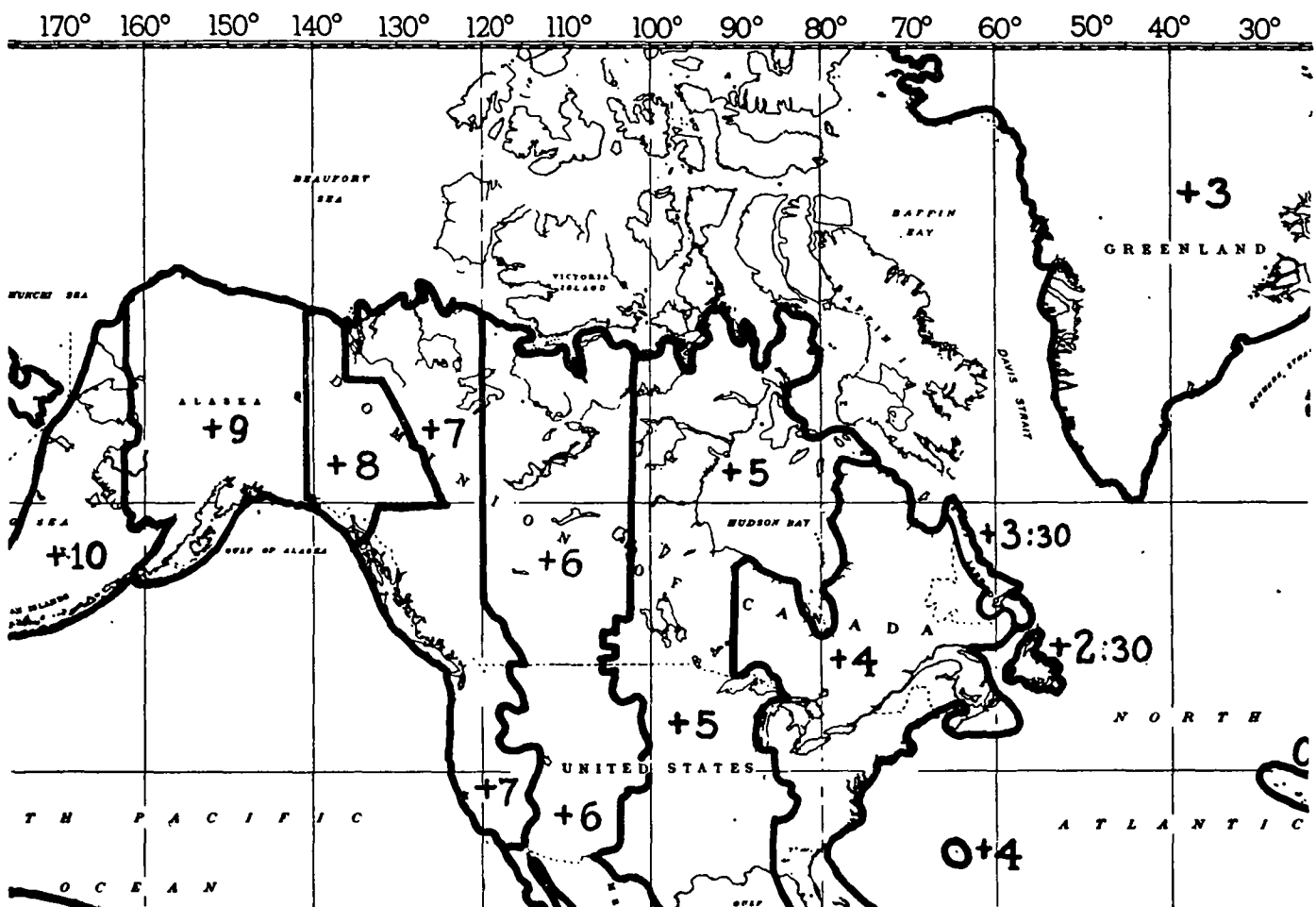
■ 1004. TIME ZONE CHART OF THE WORLD:



1004. TIME ZONE CHART OF THE WORLD (Continued) :



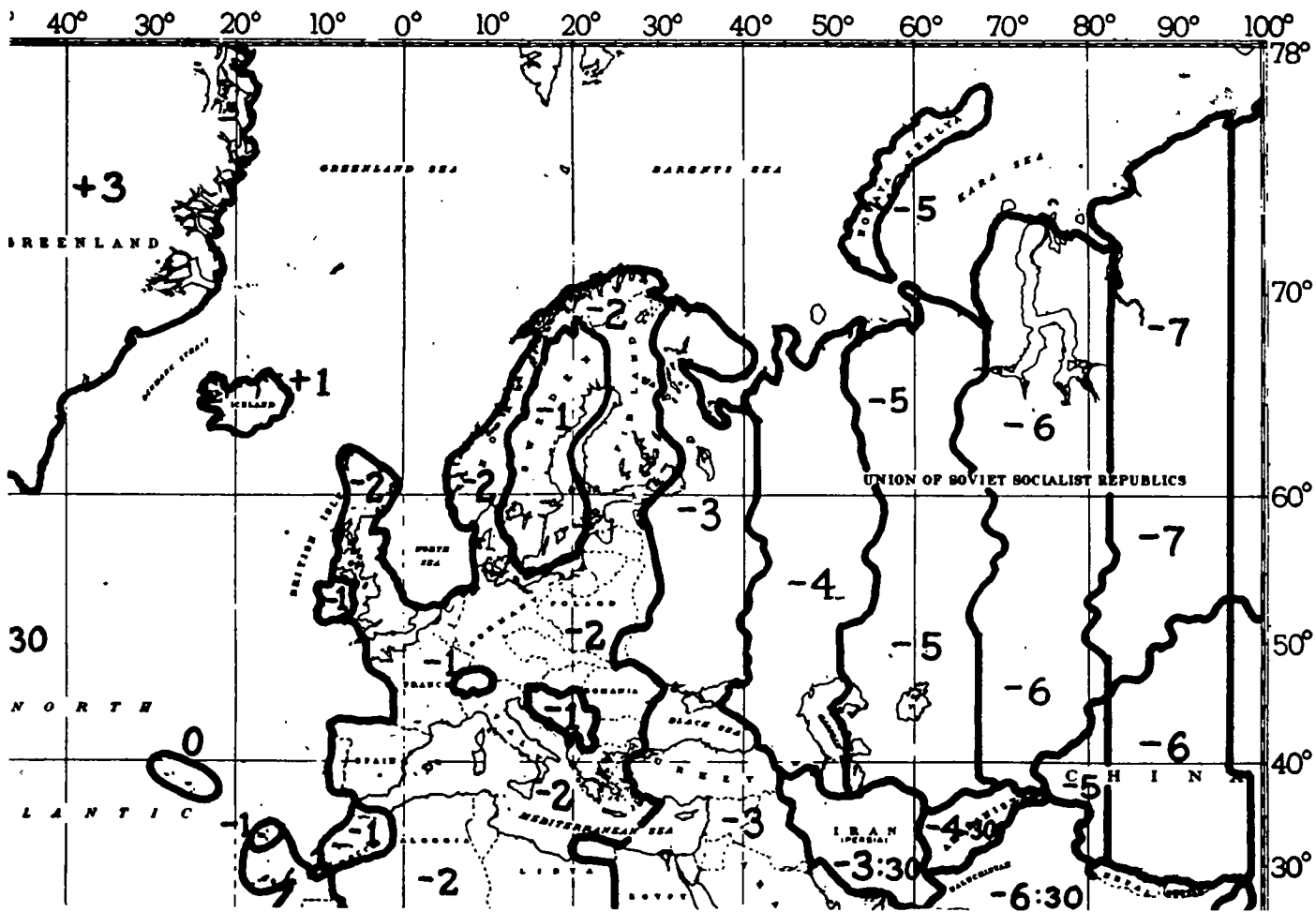
1004. TIME ZONE CHART OF THE WORLD (Continued) :



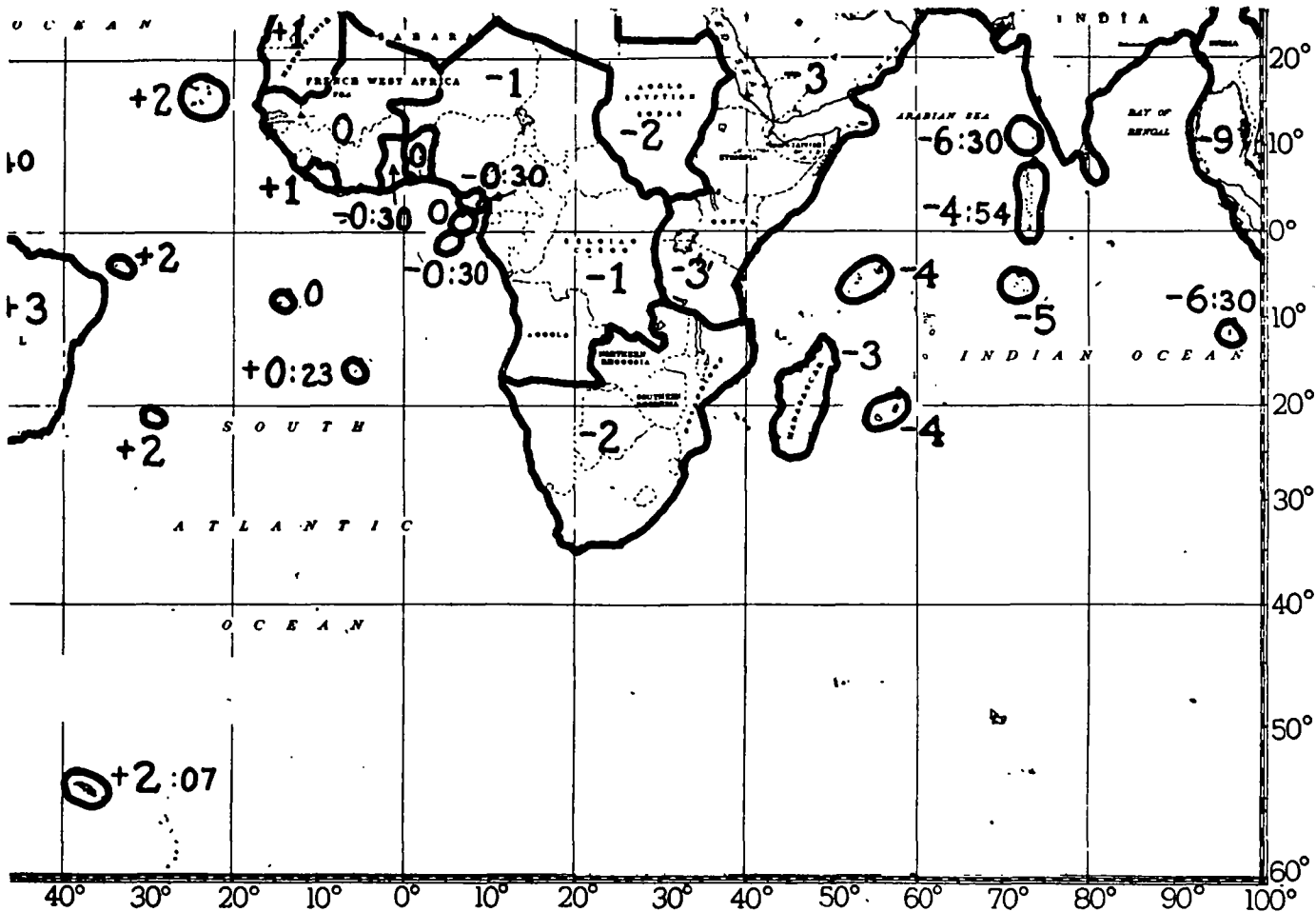
1004



1004. TIME ZONE CHART OF THE WORLD (Continued) :



1004. TIME ZONE CHART OF THE WORLD (Continued) :





■ 1005. DIAGRAM OF TIDES, SUNLIGHT AND MOONLIGHT.—*a.* Sub-paragraph *g* shows a sample of a type chart which should be prepared and issued for each major operation or operational area. These charts are prepared by the Joint Intelligence Study Publishing Board and appear in "JANIS." They are available through army channels for many portions of the world.

b. Area covered.—The astronomical data are for sea level and will not vary more than 5 minutes over a radius of 60 miles.

c. Time used.—The time on the diagram are for the time meridian indicated in the heading. When another time meridian is to be used in the field, it will be found convenient to change the figures representing hours on the left of the large diagram to conform to the new time. If the time meridian to be used is east of the one shown on the diagram, increase the figures by 1 hour for each 15°; if west, decrease the figures.

d. Dates.—In the upper diagram, each day from midnight to midnight is represented by a space between 2 lines. In the lower diagram the days are represented by vertical lines covering the period from noon of one day to noon of the next; the dates at the bottom of the diagram differ from those at the top because the date changes in passing through midnight.

e. Tides.—The times of the tides are shown by curves in the lower diagram. By noting the sequence of the tides during a day, the height of any particular tide can be found from the upper diagram.

f. Twilights, Morning and Evening.—(1) Twilights are the periods of solar illumination prior to sunrise and after sunset. Both morning and evening twilights are divided into three periods, astronomical, nautical and civil. These periods are defined with reference to the sun's position below the horizon; astronomical 18°—12°, nautical 12°—6° and civil 6°—0°.

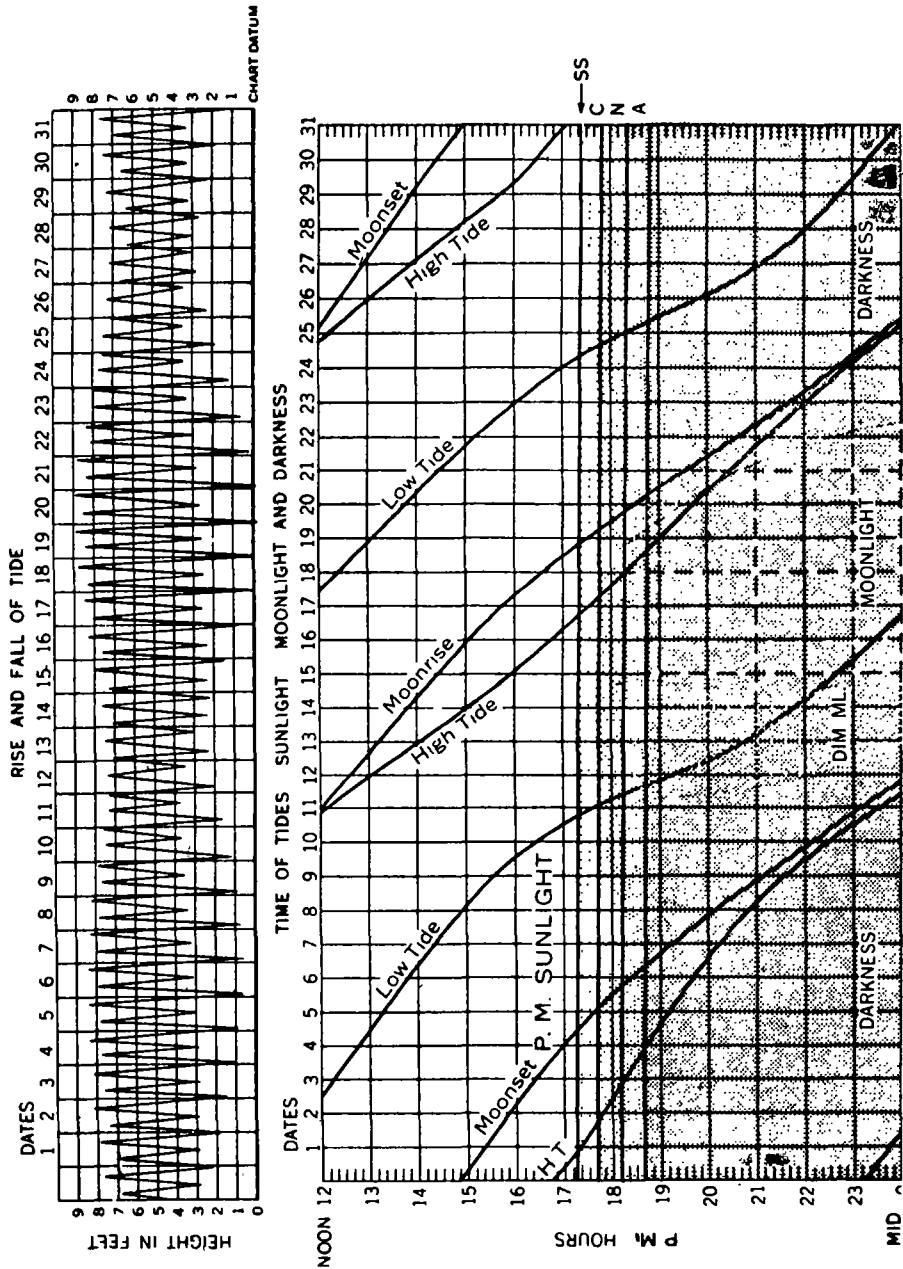
(a) Astronomical twilight affords such meager light, if any, that for military purposes it may be considered as a period of darkness.

(b) Nautical twilight provides enough illumination to carry on most types of ground movement without difficulty, and approaches conditions expected under full light of day. Vision is limited to 400 yards or less. For military purposes during the nautical periods weapons can be employed within the range of vision stated and daylight calculations relative to movement will apply, including restrictions on such movement. Bomb loading and repair work cannot be carried on, nor can tanks move buttoned up.

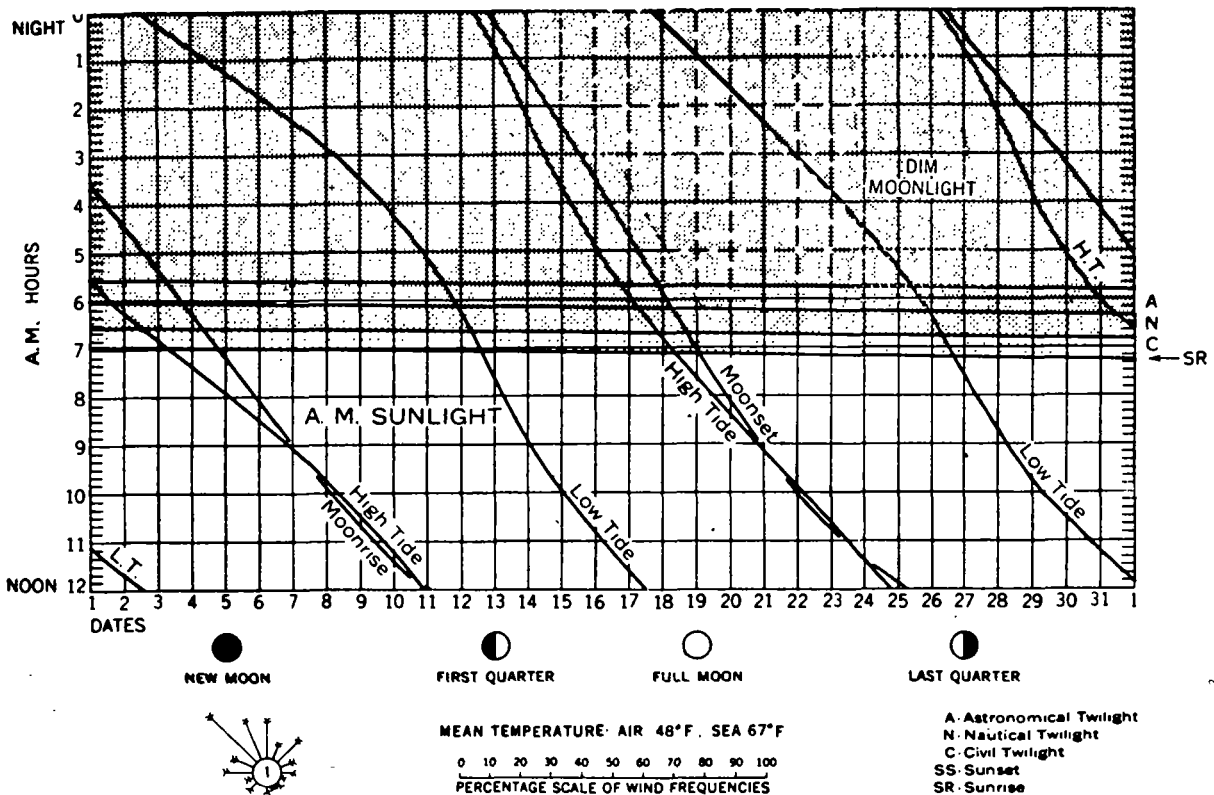
(c) Civil twilight affords sufficient light to carry on normal day activities. This period is the earliest or latest that provides sufficient natural illumination of targets to allow efficient observed artillery fire or day bombing.

(2) Except for high latitudes, values for the approximate durations of astronomical, nautical and civil twilights may be considered equal.

(3) First light, a term used by the Armed Forces of the United Kingdom, includes a slightly greater period of twilight than defined by civil twilight.



g. Diagram of tides, sunlight and moonlight (Continued) :



*This diagram, with the changes indicated, is also applicable to the following places:

TOMARI URA. - Add 10 minutes to times of high and low tides, subtract $\frac{1}{2}$ foot from heights of high tides.

ÖDOMARI-WAN. - Subtract 25 minutes from times of high and low tides, subtract 1 foot from heights of high tides

1005. DIAGRAM OF TIDES, SUNLIGHT AND MOONLIGHT (Continued):

h. Moonlight.—For astronomical twilight and solar darkness, periods of moonlight and dim moonlight are shown on the lower diagram. During the period of *moonlight*, the intensity of light will vary between the brightness of the full moon at zenith and about $\frac{1}{3}$ of this value. During the period of *dim moonlight*, the intensity varies from about $\frac{1}{3}$ to $\frac{1}{10}$ of the brightness of full moon at zenith.

i. Moon's Phases.—The phases of the moon are shown below the day on which they occur.

■ 1006. WEATHER.—*a.* Weather has been disregarded in these calculations. Smudge, fog clouds, refraction, reflection and precipitation affect the degrees of illumination.

b. These factors can only be included in the calculations by means of experience tables compiled in the area over a period of time and from meteorological forecasts for the area.

Chapter 11

MISCELLANEOUS DATA

	Paragraph
Factors for Conversion of Units -----	1101
Fordable Depth of Water -----	1102
Carrying Capacity of Ice -----	1103
Expressing Directions and Angular Measurements -----	1104
Speed of Sound -----	1105

MISCELLANEOUS DATA

■ 1101. FACTORS FOR CONVERSION OF UNITS.—To convert A to B, multiply A by C. To convert B to A, multiply B by D.

1	2	3	4
Unit	Factor		Unit
A	C	D	B
Length:			
Miles -----	63,360.0 *	0.00001578	Inches
Miles -----	5,280.0 *	0.0001894	Feet
Miles -----	1.609	0.6214	Kilometers
Knots (naut. miles) ¹ ---	1.1516	0.8684	Miles
Meters -----	3.281	0.3048	Feet
Kilometers -----	3,281.0	0.0003048	Feet
Inches -----	2.540	0.3937	Centimeters
Feet -----	0.1667	6.0	Fathoms
Surface:			
Square miles -----	27,878,400.0	0.0000003587	Square feet
Square miles -----	640.0 *	0.001563	Acres
Acres -----	43,560.0 *	0.00002296	Square feet
Acres -----	4,047.0	0.0002471	Square meters
Square inches -----	6.452	0.1550	Square centimeters
Square meters -----	10.76	0.0929	Square feet
Volume:			
Cubic feet -----	0.01 *	100.0	Register tons
Cubic feet -----	0.025 *	40.0 *	Measurement
Cubic feet -----	1,728.0	0.0005787	(Ship) tons
Cubic inches -----	16.39	0.06102	Cubic inches
Cubic meters -----	35.31	0.02832	Cubic centimeters
Cubic feet -----	7.481	0.1337	Cubic feet
Cubic feet -----	6.23	0.1605	U.S. gallons
Cubic feet -----	28.32	0.03531	Imperial gallons
U.S. gallons -----	231.0 *	0.004329	Liters
U.S. gallons -----	3.785	0.2642	Cubic inches
U.S. gallons -----	0.02381	42.0 *	Liters
Imperial gallons -----	1.201	0.8327	U.S. barrels
Fluid ounces -----	1.805	0.5540	U.S. gallons
Velocities:			
Miles per hour -----	1.467	0.6818	Feet per second
Meters per second -----	3.281	0.3048	Feet per second
Meters per second -----	2.237	0.4470	Miles per hour
Pressure:			
Atmospheres (mean) --	14.70	0.0680	Pounds per square inch
Atmospheres (mean) --	29.92	0.03342	Inches of mercury
Pounds per square inch--	2.036	0.4912	Inches of mercury
Feet of water -----	62.42	0.01602	Pounds per square foot
Weight:			
Ounces -----	0.0625 *	16.0 *	Pounds
Pounds -----	7,000.0 *	0.0001429	Grains (avoirdupois)
Kilograms -----	2.205	0.4536	Pounds
Short tons -----	2,000. *	0.0005 *	Pounds
Long tons -----	1.120 *	0.8929	Short tons
Angular measurement:			
Circle -----	360.0 *	0.00278	Degrees
Degree -----	60.0 *	0.0167	Minutes
Degree -----	17.8	0.056	Mils
Min ¹ -----	8.27	0.296	Minutes
Minute -----	60.0 *	0.0167	Seconds

1101. FACTORS FOR CONVERSION OF UNITS (Continued):

NOTES

¹ Normally express speed as a number of nautical miles per hour.² A mil is the angle subtended by an arc of 1 unit on a radius of 1,000 units or, in other words, an angle the tangent of which is approximately (small angles) 1/1,000. The arbitrary value of the mil adopted by the United States Army is 1/6,400 of a circle.³ Exact values.■ 1102. FORDABLE DEPTH OF WATER: ¹

<i>Type unit</i>	<i>Depth of water (feet)</i>
Infantry -----	3½
Horse cavalry -----	4½
Artillery (horse-drawn) -----	3
Wagons -----	3
Trucks and truck-drawn artillery -----	2
Light tanks -----	1-3
Medium tanks -----	2-4
Heavy tanks -----	4-6

¹ Moderate current; hard bottom.■ 1103. CARRYING CAPACITY OF ICE: ¹

<i>Thickness of Ice (inches)</i>	<i>Capacity</i>	<i>Minimum Spacing</i>
1.5	Individuals.....	20 paces
2.0	Infantry soldiers.....	5 paces
4.0	Single animals.....	
6.0	Infantry and Cavalry—march column with motor transport.....	
8.0	Light Artillery up to 2½ tons; 4-ton ² wheeled vehicles; maximum axle load 2.7 tons.....	65 feet
12-15	10-ton ² wheeled vehicles; maximum axle load 7 tons.....	65 feet
14-18	20-ton ² wheeled vehicles.....	100 feet

¹ New, sound ice in floating contact with water.² Gross weight of vehicle.

■ 1104. CHARACTERISTICS OF METHODS OF EXPRESSING DIRECTIONS OF ANGULAR MEASUREMENTS:

<i>Designation</i>	<i>Units of angular measurement used</i>	<i>Base direction</i>	<i>Direction of measurement</i>	<i>Method of expression</i>
Azimuth	Degrees or mils	True, magnetic or grid (Y) north unless otherwise stated (south may be used)	Clockwise	True (magnetic) (grid) (Y) azimuth -- mils (--° --')
Bearings	Degrees	True or magnetic north and south; whichever is designated	Direction which gives smallest arc (must not exceed 90°) is used and is designated	N (S) --° --' E (W)
Compass	Points (11° 15' each)	Magnetic or true north and south	Direction which gives smallest arc	(NE by E)
Clock face, horizontal	Hours on a clock face	12 o'clock, observer at center	From 12 o'clock to the hour indicated	At ---- o'clock
Clock face, vertical	Hours on a clock face	Vertical, target or reference point at center	From 12 o'clock to the hour indicated	At ---- o'clock
Vertical angle	Degrees or mils Per cent or ratio (slopes and roads)	Horizontal	Vertically	Elevation, + (-) --mils (-- --') slope, 10%, gradient 1:10
Air and forward observers (FA)	Yards R or L Yards O and S	Line of fire	Right or left and over or short and from observed point	----R (L) ----O (S)

NOTE

For military purposes, exact directions should normally be expressed as azimuths measured from grid, true, or rarely, magnetic north.

■ 1105. SPEED OF SOUND.—*a. In Air.*—At 50° Fahrenheit equals 1,107.6 feet per second, in still air. With a 10 mile per hour wind against or in the direction of sound travel, the speed of sound decreases or increases about 15 feet per second; for a cross-wind, no effect. Speed increases one foot per second for each degree Fahrenheit. Humidity has little effect on speed.

b. In water.—At 33° Fahrenheit equals 4,938 feet per second.

INDEX

A

	PARAGRAPH
ADMINISTRATIVE MOVEMENT	
Rail.....	217
ADJUTANT GENERAL UNITS.....	159
AGENTS	
Chemical Characteristics.....	608
AIR FORCE	
Echelons of Command.....	105
Organisation.....	105
Units.....	107
AIRBORNE DIVISION	
Ammunition Supply Data.....	328
Armament.....	112
Diagram.....	111
Gas & Oil Supply Data.....	327
Methods of Supply.....	325
Prescribed Loads.....	326
Summary of Transportation.....	113
Table of Organisation.....	110
AIR MOVEMENT	
Aircraft Loads.....	236
Coordination.....	232
Form, Movement Table.....	234
Outline of Procedure.....	231
Sequence of Planning.....	233
Supply Factors.....	236
Weight of Loads.....	235
AIR OBSERVERS	
Methods of Expressing Direction.....	1104
AIR WARNING SERVICE.....	843
ALLOCATION	
Class V, Diagram.....	321
ALLOWANCE OF MAPS	
Initial.....	507
AMMUNITION	
Chemical	
Characteristics.....	609
Requirements.....	610
Daily Requirements, Combat.....	323
Day of Supply.....	322
Definitions	
Day of Supply.....	319
Unit of Fire.....	319
Diagram, Allocations, Requests & Delivery.....	320
Diagram, Reports.....	321
Field Artillery	
Expenditures.....	324
Unit of Fire	
Basic Data.....	322
Unit of Fire for Prescribed Loads	
Airborne Division.....	328
Armored Division.....	331
Infantry Division.....	334
AAA Units.....	336
Arm'd Units, Separate.....	338
Cavalry Units.....	341
Chemical Battalion Motorized.....	343
FA Units, Separate.....	345
Tank Destroyer Units.....	347
ANGULAR MEASUREMENT	
Conversion Factors.....	1101
ANIMALS	
Daily Estimated Losses.....	408
Evacuation.....	404
Evacuation, Diagram.....	407
Hospitalization, Diagram.....	407
ANIMAL-DRAWN TRAINS	
Rates and Lengths, Marches.....	204
ANTI-AIRCRAFT ARTILLERY UNITS	
Organisation.....	123-132
Supply.....	335-336

ANTIMECHANIZED MEASURES.....	707
ANTITANK MINES	
Fields.....	707
Truck Capacities.....	708
AREAS	
Bivouacs.....	905
Cantonments.....	901
Service Commands.....	104
ARMAMENT	
Airborne Division.....	112
Armored Division.....	116
Infantry Division.....	120
Combat Vehicles.....	602
ARMORED DIVISION	
Abridged Table, Road-Spaces, Time-Lengths.....	214
Ammunition Requirements.....	331
Armament.....	116
Diagram.....	115
Gas & Oil Supply Data.....	329
Methods, Supply.....	330
Radio Equipment.....	844
Table of Organisation.....	114
Type Radio Nets.....	824
Unit of Fire and Prescribed Ammunition.....	331
ARMORED UNITS, SEPARATE	
Organisation.....	132-136
Supply.....	337-338
ARMORED VEHICLES	
Characteristics.....	601
Armament.....	602
ARMY.....	107
ARMY GROUND FORCES, ORGANIZATION.....	102
ARMY SERVICE FORCES, ORGANIZATION.....	103
ARTIFICIAL OBSTACLES.....	707
AZIMUTH.....	1104

B

BARRAGE, FIELD ARTILLERY.....	612
BASIC DATA	
Class I Supplies.....	310
Class III Supplies.....	314
Class V Supply.....	322
BASIC ROAD SPACES.....	202
BATTLE CASUALTIES.....	401
BEARINGS.....	1105
BEDS, REQUIRED, METHODS OF COMPUTING.....	402
BILLETING.....	902
BIVOUACS	
Areas.....	905
References.....	906
BLOCKS, ROAD.....	708
BOMBARDMENT AVIATION, T/O & E's.....	106
BOUNDARIES	
Service Commands.....	104
BRIDGES	
Fixed, Characteristics.....	703
Floating, Characteristics.....	703
Load Capacities.....	702
BUILD UP, RESERVE SUPPLY.....	309

INDEX

C

	PARAGRAPH
CAMPS	
References	908
Semi-permanent	908
Tent, Diagram	903
Tent, Shelter	904
CANTONMENTS	901
CAPABILITIES, CHEMICAL UNITS	611
CAPABILITIES, RADIO	820
CAPACITY	
Bridge, Loads	702-703
Ice, Loads	1103
Means, Transportation for Casualties	403
Personnel, Truck	208
Railway Equipment	217
Roads, Loads	702
Truck Loading	308
Water Supply Equipment	705
CARS	
Rail Capacities	217
CASUALTIES	
Battle	401
Estimates	401
Sick	401
CAVALRY	
Rates and Length, Marches	204
CAVALRY RECONNAISSANCE GROUP, MECHANIZED	137
CAVALRY RECONNAISSANCE SQUADRON, MECHANIZED	
Armament	138
Gas & Oil Supply Data	339
Organisation	138
Train, Prescribed Loads	341
U/F and Basic Load of Am	340
CHARACTERISTICS	
Antiaircraft Artillery Weapons	605
Cargo Ships, U. S.	614
Chemical Agents	608
Chemical Munitions	609
Chemical Weapons	607
Coast Artillery Weapons (Mobile)	606
Ferrying Equipment	703
Field Artillery Weapons	604
Fixed Bridges	703
Floating Bridge Equipment	703
Infantry Weapons	603
Landing Craft	613
Radio Sets	827
Vehicles and Weapons	601
CHART	
Organisation	
War Department	101
Army Air Forces	105
Army Ground Forces	102
Army Service Forces	103
Service Command Boundaries	104
Time Zones	1003-1004
CHEMICAL	
Agents, Characteristics	608
Ammunition, Requirements	609
Battalion, Motorised, Supply	342-343
Units, Capabilities	611
Warfare Service, Units, Organisation	160
Weapons, Characteristics	607
CHOICE OF MEANS	
Use, Signal Communications	810
CLASS I	
Day of Supply	308
Diagram, Supply	312
Diagram, Distribution	311
Supplies, Basic Data	309
Time Elements	313

	PARAGRAPH
CLASS II	
Day of Supply	308
Supplies, Requisition and Shipment	317-318
CLASS III	
Day of Supply	308
Diagram, Requisition and Distribution	316
Motor Vehicle Supply	315
Supplies, Basic Data	314
Vehicle Fuel and Lubricants	314
CLASS IV	
Day of Supply	308
Supplies, Requisition and Shipment	317-318
CLASS V	
Basic Data	322
Diagram, Distribution	320
Reports, Diagram	321
CLASSIFICATION	
Maps	502
Messages, Signal Communication	811
CLASSIFIED INFORMATION, SIGNAL COMMUNICATION	802
COACHES, PASSENGER CAPACITY TABLE	217
COAST ARTILLERY UNITS	139-140
COAST ARTILLERY WEAPONS, MOBILE, CHARACTERISTICS	606
COMBAT VEHICLES	
Armament	602
Dimensions	601
Weights	601
COMMUNICATION	
Principal Items	
Signal Equipment, Infantry Division	844
Signal Equipment, Armored Division	844
Radio	
Capabilities	820
Precautions	821
General	819
Radio Sets	
Characteristics	826
Security	805
Signal	
Classified Information	802
Cryptographic	807
Data, References	803
Intelligence	804
Physical Security	805
Telegraph, Manual	837
Visual	
Aircraft	834
Employment	828
Flags	830
Lamps	829
Labels	833
Pyrotechnics	831
Smoke	832
Wire	
Data	839
Facsimile	838
Telegraph	837
Telephone	835
Teletype	836
COMPASS	1104
COMPOSITION, RAILROAD TRAINS	227
CONCENTRATIONS, FIELD ARTILLERY	612
CONSTRUCTION	
Mine Fields	707
Roads	702
CONVERSION	
Factors	1101
Table, Local War Time to Greenwich Time	1103
To Unit, Factors	1101
COORDINATES, MAP; GRID	508
COORDINATION, SIGNAL COMMUNICATION	809

INDEX

	PARAGRAPH
CORPS	
Organization.....	109
Troops.....	109
Type.....	
Radio Nets.....	826
Wire Nets.....	842
CRAFT LANDING, CHARACTERISTICS	613
CRYPTOGRAM, USE OF.	
SIGNAL COMMUNICATION.....	814
CRYPTOGRAPHIC	
Security, Signal Communication.....	807
 D	
DAILY REQUIREMENTS.	
AMMUNITION FOR COMBAT.....	323
DATA	
Basic, Class I Supplies.....	310
Class III Supplies.....	314
Class V Supply.....	322
Reference, Signal Communications.....	814
Wire.....	840
DATES, METHODS OF DESIGNATION	1001
DAY OF SUPPLY	308
DEMOLITIONS	
Carried by Units.....	706
DENSITY, MOTOR COLUMNS	209
DEPTH, WATER, FORDABLE	1103
DIAGRAM	
Airborne Division.....	111
Armored Division.....	115
Class I Supplies.....	312
Class D Supplies, Allocations and Requests.....	320
Corps Troops.....	109
Evacuations, Animals.....	407
Prisoners of War.....	416
Personnel.....	406
Hospitalization.....	
Animals.....	407
Personnel.....	406
Infantry Division.....	119
Medical Service, Infantry Division.....	405
Personnel, Replacement System.....	410
Requisition and Shipment.....	
Class I Supplies.....	312
Class II Supplies.....	317-318
Class III Supplies.....	316
Class IV Supplies.....	317-318
Class V Supplies.....	320
Tent Camp.....	903
Tides, Time, Light.....	1005
DIMENSIONS	
Capacity, Railroad Cars.....	218
Equipment.....	601
DISTRIBUTION	
Battle Losses, Theater of Operations.....	414
Class I Supplies.....	311
Class III Supplies.....	316
Maps.....	506
Supply Point.....	302
Unit.....	302
DIVISION	
Airborne.....	110-113
Armored.....	114-117
Infantry.....	118-121
 E	
ECHELON	
Infantry Division.....	215
EMPLOYMENT, VISUAL COMMUNICATION	828

	PARAGRAPH
ENGINEER	
Bridge Equipment.....	703
Characteristics, Ferrying Equipment.....	703
Explosives, Carried by Units.....	705
Equipment, Weights and Cubages.....	615
Ferrying Equipment.....	703
Fixed Bridge, Characteristics.....	702
Floating Bridge Equipment, Characteristics.....	703
Mapping Troops.....	504
Units.....	161
Water Supply Equipment, Capacity.....	705
EQUIPMENT	
Bridge.....	703
Capacity.....	
Water Supply.....	705
Dimensions.....	601
Ferrying.....	703
Intrenching.....	707
Signal, Principal Items.....	844
Weights.....	601
ESTIMATES	
Ammunition.....	323
Casualties.....	401
Daily Losses, Campaign.....	408
Gasoline Consumption.....	314
Prisoners of War.....	416
EVACUATION	
Animal.....	404
Animals, Diagram.....	407
Casualty Estimates.....	401
Estimated Daily Losses.....	408
Hospitalization, Animals.....	407
Hospitalization, Personnel.....	406
Means, Transporting Casualties.....	403
Methods, Computing Beds Required.....	402
Personnel.....	404
Personnel, Diagram.....	406
Policies.....	412
Prisoners of War, Diagram.....	417
Time Element of.....	404
EXAMPLES, MARCH GRAPHS	
AND MARCH TABLES.....	213
EXPENDITURES.	
FIELD ARTILLERY AMMUNITION.....	324
EXPLOSIVES, CARRIED BY UNITS	706
 F	
FACSIMILE EQUIPMENT.	
WIRE COMMUNICATION.....	839
FACTORS	
Computing Losses.....	412
Supply, Air Movement.....	236
FERRYING EQUIPMENT	703
Characteristics.....	703
FIELD	
Antitank Mine.....	707
Distribution, Maps.....	606
Fortifications.....	707
Mine, Construction.....	707
Signal Communication.....	
General Responsibility.....	801
FIELD ARTILLERY	
Ammunition Expenditures.....	324
Barrage.....	612
Concentrations.....	612
Separate Units, Organization.....	142-155
Separate Units, Supply.....	344-345
Weapons, Characteristics.....	604
FIXED BRIDGES, CHARACTERISTICS	703
FLAGS, VISUAL COMMUNICATION	830
FLOATING BRIDGE	
EQUIPMENT, CHARACTERISTICS.....	703

INDEX

FOOT AND ANIMAL	
Elements, Forced Marches.....	205
Motor Elements, Rate and Lengths, Marches.....	204
FORCED MARCHES	
Foot and Animal Elements.....	205
Graph.....	205
FORDABLE DEPTH OF WATER	1102
FORM	
Abridged Table	
Road-Spaces and Time-Lengths,	
Armored Division.....	214
Infantry Division.....	214
Equipment Table, Air Movement.....	233
Railway Entraining Table.....	222
Tabulating, Trucks Required,	
Mntnr Movements (Tactical	
Movements), Infantry Division.....	207
FORTIFICATION	
Field.....	707
Intrenching Equipment.....	707
Obstacles Against Personnel.....	707
Obstacles Against Vehicles.....	708
Types.....	708
Work Hours.....	708
FREIGHT CARS, BULK LOADING,	
STANDARD GAUGE RAILROAD	218
FUEL REQUIREMENTS	
Airborne Division.....	327
Armored Division.....	329
Infantry Division.....	333
AAA Units.....	335
Armored Units, Separate.....	337
Cavalry Squadron, Mechanised.....	339
Chemical Battalion, Motorized.....	342
Field Artillery Units Separate.....	344
Tank Destroyer Units.....	346

G

GASOLINE	
Basic Data.....	314
Unit Distance.....	315
Weights.....	314
GRAPHS	
Forced Marches.....	205
Examples of March Graphs and March Tables.....	213
GREENWICH	
Civil Time.....	1001
GRID COORDINATES, MAP.....	
	508

H

HOSPITALIZATION	
Animals, Diagram.....	407
Personnel, Diagram.....	408
HOURS, WORK, FORTIFICATIONS	707

I

ICE, CAPACITY, CARRYING LOADS.....	1103
INFANTRY	
Rates and Lengths of Marches.....	204
INFANTRY DIVISION	
Armament.....	120
Artillery Ammunition, Resupply Load.....	334
Artillery Radio Net.....	822
Command Radio Net.....	822
Diagram.....	119
Form for Abridged Table, Road-Spaces and Time-Lengths.....	210
Gasoline Requirements.....	333
Medical Service, Infantry Division.....	408
Motor Movement by Echelon.....	216

INFANTRY DIVISION (Continued):	
Prescribed Loads	
Ammunition.....	334
Quartermaster Company.....	332
Principal Items, Signal Equipment.....	844
Reconnaissance Radio Net.....	822
Table of Organisation.....	118
Transportation.....	121
Trucks Required, Mntor Mvments (Tactical).....	207
Types, Radio Nets.....	822
Unit of Fire.....	-
Ammunition.....	334
Vehicle, Fuel Requirements.....	333
Warning, Radio Net.....	822
Work Sheet.....	
Availability Trucks, Troop Movements.....	216
INITIAL ALLOWANCES, MAPS.....	507
INTRENCHING, EQUIPMENT FORTIFICATION.....	707

L

LABOR.....	305
LAMPS, VISUAL COMMUNICATION.....	829
LANDING CRAFT, CHARACTERISTICS.....	613
LATITUDE AND LONGITUDE.....	1004
LENGTH, CONVERSION FACTORS.....	1101
LOADING	
Plan, Train, Individual.....	224
Scales, Railway Car.....	222
Transport.....	228
LOADS	
Airplane.....	236
Bridge Capacity.....	702
Capacity	
Railway Equipment.....	219
Ice.....	1103
Roads.....	702
Passenger Capacity Standard U. S. Coaches.....	217
Truck	
Antitank Mines.....	706
Personnel Capacities.....	206
LOCATION, MESSAGE CENTER.....	816
LONGITUDE AND LATITUDE.....	1004
LOSSES	
Battle, Distribution, T of Opns.....	414
Battle, Estimate, Frnt Line Divisn.....	415
Daily Estimate, Campaign.....	408
Example, Computatns.....	413
Factors, Computing.....	412
Rate, Theater of Operations.....	411

M

MAINTENANCE, ROADS.....	702
MAINTENANCE FACTORS.....	308
MANUAL TELEGRAPH, COMMUNICATION.....	838
MAPPING TROOPS, ENGINEER.....	604
MAPS	
Classification.....	502
Distributinn, Field.....	506
Grid Coordinates.....	508
Initial Allowance.....	507
Military, Responsibility.....	501
References.....	509
Types, Theater of Operations.....	503
MARCHES	
Dog Team.....	204
Forced, Foot and Animal Elements.....	205
Rate and Length, Foot, Animal, and Motor Elements.....	204
Snow and Extreme Cold.....	204

INDEX

	PARAGRAPH
MARCH GRAPHS AND MARCH TABLES	
Example.....	213
General.....	212
MEASURES, ANTIMECHANIZED.....	708
MECHANIZED CAVALRY RECONNAISSANCE - SQUADRON, TYPE RADIO NETS.....	824
MEDICAL DEPARTMENT	
Day of Supply.....	308
MEDICAL SERVICE, DIAGRAM, INFANTRY DIVISION.....	405
MEDICAL DEPARTMENT UNITS, ORGANIZATION.....	162
MESSAGE CENTER	
Location.....	816
Operation.....	817
Purpose.....	815
MESSAGES	
Preparation.....	812
Time of Transmission.....	818
Writing.....	813
METHODS	
Computing, Beds Required.....	402
Designating Time and Date.....	1001
Distributing, Supplies.....	302
Expressing Direction.....	1104
Procurement, Supplies.....	303
MILITARY POLICE	
Units.....	163
MILITARY MAPS, RESPONSIBILITY.....	501
MINES	
Antitank.....	708
MINE FIELDS	
Antitank.....	708
Construction.....	708
MISCELLANEOUS AMMUNITION	
Day of Supply.....	322
Units of Fire.....	322
MOTOR COLUMNS	
Average Road-Space Chart.....	210
Density.....	209
Time-Length Chart.....	210
Traffic Flow.....	208
MOTOR ELEMENTS, FOOT AND ANIMAL, RATE AND LENGTH OF MARCHES.....	204
MOTOR MOVEMENT	
Echelon.....	211
Echelon, Infantry Division.....	215
Road-Space.....	210
Time Formula.....	210
Truck Capacity, Personnel.....	206
Wheel Vehicles in Snow.....	204
MOVEMENT	
Air	
Aircraft Loads.....	236
Planning, Units.....	233
Transport	
Definitions.....	231
Outline, Procedure.....	231
Weights, Loads.....	235
Armored Division	
Form, Table, Road-Spaces and Time-Lengths.....	214
Echelon Motor.....	211-216
Example, G-3 Work Sheet	
Availability Trucks.....	216
Motor	
Echelon Movement.....	211
Road-Space.....	202
Truck Capacities, Personnel.....	206
Rail, T of Ops	
Basic Data.....	226
Composition, Trains.....	227
Ship to Shore.....	242

MOVEMENT (Continued)	
Table, Air Transport.....	234
Troop.....	201
Work Sheet, Entraining Table, Rail.....	225
Water.....	237

N

NATURAL PHENOMENA, EXPRESSION OF.....	1002
--	------

O

OBSTACLES	
Artificial.....	708
Fortifications.....	707
OIL	
Weight.....	314
OPERATION	
Message Center.....	817
ORGANIC	
Transportation	
Airborne Division.....	113
Armored Division.....	117
Infantry Division.....	121
ORDNANCE DEPARTMENT, UNITS.....	164
ORGANIZATION	
Adjutant General Units.....	159
Airborne Division.....	111
Antiaircraft Artillery Units.....	122-131
Army Air Forces.....	105-106
Army Ground Forces.....	102
Army Service Forces.....	103
Armored Division.....	115
Armored Unit, Separate.....	132-136
Cavalry Units.....	137-138
Coast Artillery Units.....	139-140
Corps.....	109
Chemical Warfare Units.....	160
Engineer Units.....	161
Field Artillery Units.....	141-155
Infantry Division.....	119
Military Police Units.....	163
Ordnance Units.....	164
QM Units.....	165
Signal Units.....	166
Special Service Units.....	159
Transportation Corps Units.....	167
Tank Destroyer Units.....	156-158
War Department.....	101

P

PACKAGE	
Containers, Class V Supply.....	322
Rations.....	310
PANELS, VISUAL COMMUNICATION.....	834
PASSENGER CAPACITY TABLE, STANDARD COACHES.....	218
PERSONNEL	
Capacities, Trucks.....	206
Daily Estimated Losses.....	408
Evacuation, Time.....	404
Evacuation, Diagram.....	406
Hospitalization, Diagram.....	406
Replacement System Diagram.....	410
PHOTOGRAPHIC	
Aviation, T/O's.....	106
Troops, Army Air Forces.....	508
PHYSICAL SECURITY, SIGNAL COMMUNICATION.....	806
PORTS	
Facilities.....	239
Sailing Distances Between.....	240
Turnarounds.....	241

INDEX

PRECAUTIONS, RADIO.....	PARAGRAPH 821
PREPARATION OF MESSAGES, SIGNAL COMMUNICATION	812
PRESCRIBED LOAD.....	307
PRESSURE, CONVERSION FACTORS.....	1101
PRIORITY, WORK, FIELD FORTIFICATIONS.....	707
PRISONERS OF WAR	
Diagram, Evacuation.....	417
Estimates.....	416
PYROTECHNICS, VISUAL COMMUNICATION	831

Q

QUARTERMASTER	
Company Infantry Division.....	332
Units	165

R

RADIO COMMUNICATION	
Capabilities.....	820
General.....	819
Precautions.....	821
Transmission Range.....	827

RADIO NET	
Command	
Infantry Division.....	822
Type	
Armored Division.....	823
Cavalry Squadron, Mechanized.....	824
Corps.....	825
Infantry Division.....	822

RADIO SETS, CHARACTERISTICS	826
-----------------------------------	-----

RAILHEAD DISTRIBUTION	302
-----------------------------	-----

RAIL MOVEMENT	
Administrative.....	217
Car Capacities.....	218
Car Space Requirements.....	217
Composition, Trains.....	223
Entraining Table.....	225
Standard Gauge, Freight Cars, Bulk Loading.....	218
Table, Rail Movement.....	222
Trains, Types and Composition.....	227
Work Sheet, Preparing Entraining Table.....	225

RAILWAY CAR	
Capacities.....	218
Space Requirements.....	219
Loading Scales.....	222

RATES AND LENGTHS OF MARCHES.....	204
-----------------------------------	-----

RATES OF LOSSES, T of Opns.....	411
---------------------------------	-----

RATIONS, BASIC DATA.....	310
--------------------------	-----

RECONNAISSANCE	
Radio Nets	
Infantry Division, Troop.....	822

RECORDING MESSAGES, TIME.....	818
-------------------------------	-----

REFERENCES	
Bivouacs.....	906
Camps.....	906
Maps.....	509

RELATION OF SECURITY	
Signal Communication, Requirements.....	811

REPAIR ROADS.....	702
-------------------	-----

REPLACEMENT	
Diagram, Personnel System.....	410
Distribution, Battle Losses, Theater of Operations.....	414
Example, Computation of Losses.....	413
Factors, Computing Losses.....	412

REPLACEMENT (Continued)	
General.....	409
Rates, Losses, Theater of Operations.....	411
System.....	409
Wire, Field, Requirements.....	839

REQUESTS	
Class V Supplies, Diagram	320

REQUIREMENTS	
Ammunition for Combat, Daily.....	823
Chemical Ammunition.....	810
Field Wire, per day.....	839
Service Troop.....	168

REQUISITION	
Class II Supplies, Diagram.....	317-318
Class III Supplies, Diagram	316
Class IV Supply, Diagram.....	317-318

RESPONSIBILITY	
General, Signal Communication Data.....	801
Signal Communication.....	801

RESUPPLY	
Loads, Ammunition	
Artillery Units.....	345
Armored Division.....	331
Infantry Division.....	334

ROADS	
Construction.....	702
Load Capacity.....	702
Maintenance.....	702
Repair.....	702
Spaces.....	202
Traffic Capacity.....	702

ROAD BLOCKS.....	708
------------------	-----

ROAD SPACES	
Form, Table	
Armored Division.....	214
Infantry Division.....	214
Motor Columns Chart.....	210

ROUNDS PER GUN PER HOUR, ARTILLERY AMMUNITION.....	322
---	-----

S

SAILING DISTANCES.....	240
------------------------	-----

SEMI-PERMANENT CAMPS	903
----------------------------	-----

SERVICE MEDICAL DIAGRAM, INFANTRY DIVISION.....	405
--	-----

SECURITY	
Relation to Other Signal	
Communication Requirements.....	810
Signal Communication	
Intelligence.....	804
Physical.....	806
Transmission.....	808

SERVICE COMMAND BOUNDARIES.....	104
---------------------------------	-----

SERVICE FORCES, ARMY.....	103
---------------------------	-----

SERVICE TROOP REQUIREMENTS.....	168
---------------------------------	-----

SHELTER TENT CAMP.....	904
------------------------	-----

SHIPMENT AND REQUISITION	
Class I Supplies.....	312
Class II Supplies.....	317-318
Class III Supplies.....	316
Class IV Supplies.....	317-318
Class V Supplies.....	320

SHIPPING	
Conversion Factors.....	244
Requirements, Major Units.....	243
Terms.....	237

SHIPS	
Cargo, U. S. Characteristics.....	814

INDEX

	PARAGRAPH
SICK CASUALTIES.....	401
SIGNAL COMMUNICATION	
Classified Information.....	802
Coordination.....	809
Cryptographic Security.....	807
Data, References.....	803
Data, General Responsibility.....	801
Detailed Responsibility.....	801
Field, General Responsibility.....	801
Preparation, Messages.....	812
Requirements, Relation, to Security.....	811
Security.....	805
Transmission Security.....	808
Use, Cryptograms.....	814
SIGNAL EQUIPMENT	
Principal Items.....	844
SIGNAL INTELLIGENCE AND	
SIGNAL SECURITY, GENERAL.....	804
SIGNAL UNITS.....	
.....	166
SNOW AND EXTREME COLD,	
MARCHES.....	204
SOUND, SPEED.....	
.....	1105
SPACES	
Requirement, Railway Car, Vehicles.....	219
Road.....	202
Road-Spaces and Time-Lengths, Form,	
Infantry Division.....	214
Armored Division.....	214
SPECIAL SERVICE UNITS.....	
.....	159
SUPPLY	
Class I	
Basic Data.....	310
Diagram, Supply.....	312
Distribution.....	311
Time Elements.....	313
Class II	
Diagram, Requisition and Shipment.....	317-318
Class III	
Basic Data.....	314
Diagrams.....	316
Class IV	
Diagram, Requisition and Shipment.....	317-318
Class V	
Basic Data.....	319
Definitions.....	319
Diagram, Allocations and Requests.....	320
Diagram, Reports.....	321
Day of Supply.....	308
Procurement and Distribution.....	303
Reserve, Build Up.....	309
Trains	
Division.....	304
Methods.....	302
UNIT SUPPLY DATA	
Airborne Division.....	325-328
Armored Division.....	329-331
Infantry Division.....	332-334
Antiaircraft Artillery.....	335-336
Armored Units, Separate.....	337-338
Cavalry.....	339-342
Chemical Mortar Battalion.....	343-344
Field Artillery Units, Separate.....	345-346
Tank Destroyer.....	347
Water.....	704
SURFACE, CONVERSION FACTORS.....	
.....	1101
SYSTEM	
Diagram, Personnel and Replacement System.....	410
Replacement.....	409
Signal Communication, Transmission.....	808

T

TABLE	
Air Movement.....	234
Conversion,	
Local War Time to Greenwich Time.....	1003

TABLE (Continued)	
Entraining.....	225
Hospital Patients, Accumulation.....	402
Latitude and Longitude.....	1004
March and March Graphs.....	212
Example.....	213
Organisation	
Airborne Division.....	110
Armored Division.....	114
Infantry Division.....	118
Passenger Capacity, Coaches.....	217
Preparing Entraining, Wrnk Sheet.....	225
Signal Equipment.....	845
Sunrise and Sunset.....	1005
Train Consist.....	223
TASK FORCE, ORGANIZATION.....	
.....	108
TANK DESTROYER UNITS	
Organization.....	156-158
Supply.....	347
TELEPHONE, WIRE COMMUNICATIONS.....	
.....	836
TELEGRAM, DAILY.....	
.....	312
TELEGRAPH, MANUAL, COMMUNICATIONS.....	
.....	838
TELETYPEWRITER, WIRE COMMUNICATIONS.....	
.....	836
TENT CAMP	
Diagram.....	903
Shelter Tent.....	904
THEATER OF OPERATIONS	
Daily Loss Rate.....	411
Distribution, Battle Losses.....	414
Types, Maps.....	503
TIDES.....	
.....	1005
TIME	
Elements	
Class I Supply.....	312
Evacuation.....	404
Formula, Motor Movement by Echelon.....	211
Greenwich, Civil.....	1001
Length, Columns.....	210
Motor Columns, Traffic Flow.....	208
Method, Designation.....	1001
Message Transmissinn.....	818
Turnarounds.....	241
Zones.....	1004
TRAFFIC	
Flow, Motor Columns.....	208
Roads, Capacity.....	702
TRAINS	
Division.....	304
TRANSMISSION	
Security, Signal Communication.....	807
Time of Messages.....	818
TRANSPORT	
Loading.....	238
TRANSPORTATION	
Airborne Division.....	113
Armored Division.....	117
Corpe Units.....	109
Infantry Division.....	121
Maximum Loads, Casualties.....	403
TRUCK	
Capacities	
Antitank Mines.....	708
Casualties.....	403
Cargo, Work Sheet, Truck Availability,	
Troop Movement, Infantry	
Loading Capacities.....	306
Loads	
Antitank Mines.....	708
Motorized Units (Except Medium and Heavy	
Artillery), Length Marches.....	204
Personnel Capacity.....	206
TURNAROUNDS.....	
.....	241

INDEX

TWILIGHTS MORNING AND EVENING.....1005

TYPES

Fortifications.....707
Maps, Theater of Operations.....503
Radio Nets
Armored Division.....823
Cavalry Group, Mechanized.....824
Corps.....825
Infantry Division.....822
Wire Nets
Corps.....842
Infantry Division.....841

U

UNIT OF FIRE, AMMUNITION.....322

USE OF CRYPTOGRAMS

Signal Communication.....814

USE OF SIGNAL COMMUNICATIONS, CHOICE OF MEANS

810

V

VEHICLES

Armored, Characteristics.....601
Capacity for Carrying Troops.....206
Dimensions.....601
Fuel Requirements.....314
Weights.....601

VERTICAL ANGLE.....1104

VELOCITIES, CONVERSION FACTORS.....1101

VISUAL COMMUNICATIONS

Aircraft.....834
Employment.....826
Flags.....830
Lamps.....829
Panels.....833
Pyrotechnics.....831
Smoke.....832

VOLUME, CONVERSION FACTORS.....1101

W

WAR DEPARTMENT ORGANIZATION.....101

WARNING

Radio Nets
Infantry Division.....822

WATER

Depth Fordable.....1102
Supply.....705
Equipment, Capacity.....705
Troop Requirements.....705

WEAPONS

Antiaircraft Artillery, Characteristics.....605
Chemical, Characteristics.....607
Coast Artillery, Mobile, Characteristics.....606
Field Artillery, Characteristics.....604
Infantry, Characteristics.....603

WEIGHTS

Class I Supply.....310
Class V Supply.....322
Conversion Factors.....1101
Engineer Equipment.....615
Equipment.....601
Gasoline.....314
Oil.....314
Rations.....310
Tactical Vehicles.....601

WIRE COMMUNICATIONS

Data.....839
Equipment Facsimile.....838
Telegraph.....837
Telephone.....835
Teletype and Teletypewriter.....836

WIRE NETS, TYPE

Corps.....842

WORK SHEET, AVAILABILITY,

TRUCKS, INFANTRY DIVISION,
MOTOR MOVEMENT.....216
Preparing Entraining Tables.....225

WORK HOURS, FORTIFICATIONS.....707

WORK PRIORITY,

FIELD FORTIFICATIONS.....707

Z

ZONES, TIME.....1004

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